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ORIGINAL ESSAYS AND CASES.

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Art. I.—*History of a case of Neuralgia Facialis, with reflections,*

By Daniel Drake, M. D.

On the 24th of May, 1824, I was requested to visit Mr. J. R. W. of Cincinnati, aged about 40 years, who had for several months been confined to his house with neuralgia of the left side of his head and face. The history of his case, as compiled from the statements of himself, his family, and one of his attending physicians, is as follows:

His father, and some of his brothers, had been subject to gout. For many years he led a sea faring life as super-cargo of a trading vessel, and afterwards resided in one of our eastern cities as a merchant. He was always temperate in drinking; and not intemperate in eating, though he had a strong appetite, which he had not particularly restrained, and could eat, without acidity or flatulence, many things which are apt, in ordinary stomachs, to produce those symptoms. He had been generally subject to *constipatio intestinalis;* but up to his 34th year his health was good, and his constitution seemed unimpaired. About that time, (December 1819,) being in high health, he was suddenly affected, in one of the streets of Philadelphia, with general debility of his left side. After leaning against a pillar of the market house

for a few minutes he recovered and proceeded to his place of destination, the Court House; where, in a short time, the hemiplegia returned. A physician being called in, he was bled copiously, and then carried home. Five or six successive bleedings, with the liberal administration of cathartic medicines, so far relieved him, that in ten days he was able to serve as a juryman, in a case for which he had been selected before his attack. After serving two days in this capacity, he was seized with a violent head ach, for which he was cupped with advantage. Three days afterwards, when confined in a close and hot jury-room, the atmosphere of which was loaded with tobacco smoke, the paralysis returned, but was arrested by another blood-letting, performed on the spot, by one of the jury. He was then taken home a second time, where he slowly recovered; and through the ensuing spring, summer and autumn, enjoyed good health. In October (1820) he visited the Western Country, where he spent the winter, in his usual health, and started home in the spring of 1821. On his way back he had an attack of catarrh. Soon after his arrival in Philadelphia he discovered that his sense of hearing, in the left ear, was much impaired; and it continued so 'till the month of January, 1824, when it began to improve; and by the spring of that year was nearly restored.

About the time that he first experienced this deafness, he observed his sense of smelling, in both nostrils, to be obtuse. It gradually became extinct; and the schneiderian membrane, at the same time, fell into a state of deficient secretion, which still continues. In the month of September, 1821, he emigrated to Cincinnati. During this autumn he had two attacks of sore throat, (*Cynanche pharyngea*) neither of them attended with ulceration. In the following winter, a hard, indolent, and insensible tumour appeared between the angle of his mouth and his ear, within the limits of the left whisker. The skin was not discoloured, but it suppurated, slowly, and was regarded as scrophulous. In the succeeding summer he drank, for some time, a decoction of *speedwell*, and the ulcer slowly healed up. In August he had an attack of dysenteric

fever. In December, when in tolerable health, and pursuing his ordinary business, he again, suddenly suffered a loss of power in his whole left side, with feelings similar to those attendant on the hemiplegia of 1819. He was immediately bled, and got better. His health for the remainder of the winter was good. In the month of February, 1823, he set off for Philadelphia, and returned in March. On his way back, he had "a bilious attack," which left him weak and disordered, for which he was directed to take a bitter infusion. This he continued through the months of April and May, within which period he lost a child, and became much depressed in spirits.

The disease for which I was consulted now began to show itself. The first pain which he experienced, was chiefly in the back part of his head. At length his left eye became weak, watery, and somewhat red, with slight pain and swelling. In June he visited Philadelphia, and the disorders of his head and eye continuing, with signs of general debility, he was advised, by a distinguished medical gentleman, to use tonics, a nourishing diet, and sea bathing. He adopted the two former; but, resolving to return to Cincinnati, omitted the last. Before leaving the city he was cupped to the quantity of eight ounces, from which, however, he seemed to receive no benefit. The pain continued, and by Autumn had established itself in the forehead, temple, and cheek of the left side. At first it appeared chiefly in the evening, in the form of an excruciating paroxism; but at length it lost the periodical character, and becoming more constant, was rather less pungent. From this period to the time when I saw him, his sufferings had been nearly incessant. In the month of January, 1824, after experiencing aggravated pain, from the application of caustic to his temple, in the day, he was seized, soon after lying down at night, with an epileptic fit, preceded by a scream, attended with frothing at the mouth, and followed by deep stupor 'till midnight. On the 16th of the following May, a week before my first visit, when sitting up in the fore noon, comparatively free from pain, and

conversing with a friend, his face was observed to flush, and became suddenly covered with sweat. He, at the same time, complained of feeling bad, and was laid on the bed, where he had three epileptic convulsions, attended with the same symptoms as before.

When I saw him, a week after this event, his situation he thought, was not materially different from what it had been for the preceding six months.

He had several exascerbations of pain in the twenty-four hours, some of which were intensely severe. They recurred at no regular periods. In the remissions, the affected parts, from the upper region of the forehead to his mouth, became the seat of a great variety of indiscribable sensations; such as might be supposed to arise from the puncture of the slenderest needle; from minute insects crawling in the skin; or from the passage of a fluid through the apertures of the subcutaneous cellular membrane. The first kind of sensation was generally between the upper lip and the eye; the last more commonly in the forehead and temple. None of these feelings were of a pleasurable kind. The whole left side of the face and forehead were often perceptibly tumefied, and sometimes slightly edematous. That side of the forehead, and the eye, were often red—the former exhibiting a circumscribed flush. The sense of taste, in the left side of his tongue, and the natural feeling of his mouth and teeth, of the same side, were much impaired. But none of his teeth were tender or decayed. The left angle of the mouth hung a little, while the *other* was slightly retracted. The pain was generally aggravated by a recumbent position. He was never chilly; but often had flushes of heat in the evening. His tongue was red, and slightly furred. His pulse was variable, fluctuating from 80 to 100 beats a minute, and not remarkable for force or fulness. He was able to walk about his room. His memory was much impaired, and his temper irritable.

Within the preceding eight months he had been subjected to the following plans of treatment:

1. A long continued course of moderate purging, chiefly with mercurial medicines, from which some advantage appeared to result.

2. A course of tonics consisting of Rubigo Ferri, the Bark, and the sulphate of Quina, all given in large doses, with various adjuvants, but to no good end.

3. A narcotic course; during which the Prussic acid, Cicuta, Stramonium and Belladonna, were all given, until they produced, their respective specific morbid effects upon the system; but they seemed rather to increase than mitigate his sufferings.

4. A short course of Arsenic, which was thought to be injurious.

5. A gentle mercurial course, which seemed to be useful.

6. Palliatives, antidyspeptics, and antispasmodics: such as great quantities of opium, in different forms; a tincture of Colomba and Gentian, with aromatics; the tinct. of Mur. Ferri; and a mixture of the tinctures of Assafœtida, Valerian, Guaiacum and Castor, with ammoniated Alcohol and Laudanum.

7. Unceasing topical applications, consisting chiefly of blisters, issues, electricity, and a great variety of stimulating and anodyne embrocations.

8. The general warm bath with frictions, and as much exercise as possible.

9. A nutricious diet, embracing, and indeed almost composed of animal food; rendered stimulating by the consumption of two quarts of French brandy every week.

Upon reviewing the history of this case, and connecting the early and repeated attacks of hemiplegia, and the recent paroxisms of epilepsy, with the failure of the various plans of stimulation, so vigorously prosecuted, I could not hesitate in deciding on an antiphlogistic method; and accordingly proposed as the basis of it, bloodletting both general and local; purging; a reduced and vegetable diet; and a consequent

abandonment of all stimulants and narcotics. The patient, who had been taught to believe, that his existence was protracted only by the use of tonics and excitants, was at first alarmed at the proposal to lay them aside, and adopt a course of depletion; but his apprehensions were at length dissipated, and I was desired to carry it into execution.

The daily report of the case from that time forward, although somewhat tedious, will best show the influence of the change of treatment.

May 28th. At 8 o'clock in the evening, the patient sitting up, and not in violent pain, his pulse beating 100 in a minute, with a tolerable degree of force and fullness, I drew from his arm six ounces of blood. He was agitated by the operation, but the loss of blood did not seem to exert any influence on his circulatory system. The blood was dark coloured, the proportion of coagulum great, the surface *sizy* and *cupped*. This night was as usual.

29th. Directed a vegetable diet, with diminished stimulation of all kinds; and ordered one sixth of a grain of tartarized Antimony every four hours. At bed time he was as usual—pulse varying from 90 to 100.

30th. In the morning pulse 80. In the evening pulse 100 and not very compressible. Drew eight ounces of blood which, like the other, had an inflammatory surface. At bed time, his pulse was 88, and fuller than I had yet felt it; he also complained of heat and dryness of the skin.

31st. In the morning. He complained of having suffered from febrile heat at different times through the night. His face was full and inclining to redness. His pulse, when in bed varied, without any obvious cause, from 76 to 86 in a minute. It was not deficient in strength and volume. The tartarized Antimony was now given in substance with Calomel, Jalap and Nitre.

June 1st. In the forenoon. His pulse was 96 in bed. The pain moderate. His skin cool and moist. The same medicines were continued. In the evening his pulse was 88 and

moderate in force. Skin cool. He complained of a great deal of intestine motion in the integuments of his temple.

2d. His pulse throughout the day varied from 84 to 94. The medicines were continued, and as on the preceding days, operated moderately. In the evening he was cupped on the temple and forehead to four ounces. But his dislike to the operation, and my conviction of its inferiority to venesection prevented its repetition.

3d. His pulse was generally about 88, and not below the proper standard in force and fullness. Took the Antimonial solution in addition to the other medicines, and at night, instead of a dose of the antispasmodic tinctures, which had been still used, at bed time, was ordered twelve grains of compound powder of Ipecacuanha.

4th. In the morning. Rested better than usual the preceding night. Pulse, in bed, 94. Continued the medicines. At night, pulse 88, tolerably strong, complained of heat. Lost eight ounces of blood, which produced no effect on his pulse or feelings. Took the pulv. Ipecac. comp. with diluents. Blood cupped and sizy.

5th. Complained of much febrile heat the night before. Pulse, through the day, from 96 down to 88—firm and full. Sulphate of Magnesia was added to his Antimonial solution; and pulv. Doveri with excess of Ipecacuanha directed at night.

6th. Heat and restlessness in the early part of the preceding night; pulse, in the morning, as the day before. Face much less red and tumid for several days: he also had been, in all respects, more tranquil; and was, by his friends, considered better. The same medicines were continued. At night he lost fourteen ounces of blood, which accelerated his pulse from 88 to 108. The blood was cupped and covered with inflammatory crust. Took the same composing and diaphoretic powder that was ordered the night before.

7th. Much as he was yesterday. At night took a saline draught (sol. acet. pot.) with compound tincture of Opium.

8th. Condition nearly the same as the day before. Ordered powders of Nitre and Calomel.

9th. Rested pretty well. Pulse as before. Ordered ol. Ricini, and a continuation of the powders. In general, his alvine evacuations had been seldom and sparing. I had not sought to cure him by purging. The afternoon of this day he had four discharges. Pulse in the evening 80—skin cool. The powders were omitted.

10th. Rested pretty well. Pulse 84. Resumed the powders. In the afternoon the pulse 96, lost ten ounces of blood, of which, the appearance was not noted. Took spirit. Mindereri (Liquor Ammon. Acet.) with comp. tinct. Opii. at bed time.

11th. Symptoms nearly the same as the day before; prescriptions the same; had four alvine discharges.

12th. Circumstances and prescriptions, substantially the same as the day before.

13th. In the morning, pulse 104. In the evening the same, and rather small. Had three intestinal evacuations through the day, and no particular degree of pain; but from the state of his pulse I drew sixteen ounces of blood, which immediately exhibited flakes of fibrin, and the next morning the sizy covering was unusually thick and tough. After the bleeding he complained of increase of heat.

14th. Rested better than common. Pulse, in the forenoon, 112, and rather small. Was comfortable through the day. Had several alvine discharges. In the evening, his pulse was 94, and fuller. He and his family considered the 24 hours, subsequent to the last bleeding, as the most comfortable and auspicious that he had passed for many weeks.

15th. Slept tolerably, but suffered some with febrile heat. Pulse in the morning 104, and firm, if not hard. Gums slightly affected by the Calomel which had been taken at different times before. Manifested a strong desire for animal food. In the course of the day, had two copious alvine discharges in a state of fermentation. Felt so weak as to be confined to his bed all day. Suffered considerable febrile

heat. In the evening his pulse was 94, and decidedly full and tense. Took eighteen ounces of blood; which was sizy, but less cupped than the last. After the operation his pulse increased to 120, and was small and weak, but he did not faint. Prescription as usual.

16th. Had rather more pain and sense of motion than, for sometime before; and his left eye was somewhat red and watery. Prescriptions the same.

17th. Pulse in the morning 100. Had considerable heat and thirst through the night. Directed effervescing soda powders, alternately with salino—sulphurous waters from Big-Bone Springs. In the evening pulse 87. Was comfortable throughout the day.

18th. Slept well. This day was pleasant. The mineral water was continued. At night took two assafœtida pills, and no opiate of any kind.

19th. Tolerable through the day. At 7 in the evening his pulse was 88, and although he had experienced three evacuations, it was tense. He had, moreover, some increase of uneasiness and of the sense of motion about his head and face. Took fourteen ounces of blood, which was less inflammatory than the last.

20th. Well as usual. The mineral water was continued.

21st. Symptoms and prescriptions not materially different.

22d. Rested tolerably. In the evening, looked more natural than usual, and said that he had not, for ten months, passed so comfortable a day.

23d. Slept well. Found his pulse in the night down to 72. In the morning had a strong inclination for soup, which was allowed. The mineral water was continued.

24th. Strong and comfortable all day. Felt like resuming business.

25th. Rode in a gig two miles. Was hungry and sleepy after his return.

From this time he was not bled, nor did he take any medicine except the mineral water. He rode daily, and was soon able, on foot, to visit his counting room. A more generous

but still an abstemious diet was ordered. He slept well. Occasionally in the evening, he had some edematous fullness of the left side of the face; but in the morning and through the day, its appearance was the same with the right side. He ceased to have any pain, and suffered but little from the sense of motion in the parts, which had so long distressed him. His pulse remained variable and easily excited. His spirits became buoyant, and his friends thought him more animated and conversational than he had been, since the attack of palsy in 1819. In the month of July he set off for Philadelphia on business, and now resides in that city.

REFLECTIONS.

1. Much of the relief which the patient experienced, manifestly arose from a discontinuance of the stimulating plan of treatment.

2. The cathartic medicines which were administered, during my attendance, produced much more effect after he had been bled several times, than before. That they were in any great degree instrumental in mitigating his disease, is not apparent. At an early period they had been exhibited to a much greater extent, with but little advantage.

3. The blood letting, carried to the quantity of 98 ounces, in three weeks, seemed to be the chief agent in the cure, as far as a cure could be said to be affected.

4. Under the use of this remedy the pulse, for a time, became more active and energetic, the febrile heat greater, and all the symptoms of a phlogistic diatheses more open and declared.

5. The dyspepsia, and the other chylopoietic derangements, which suggested the treatment in the beginning of his long illness were, probably, the effect, and not the cause of the cerebral disease. Before the attack in 1819, he had passed through the *dyspeptic period*, without any other symptom of abdominal disorder, than constipation; and, that condition of the digestive organs, when unassociated with gastric derangement, generally causes, or indicates, cerebral plethora. From

inattention to this fact, and forgetting that original diseases of the brain never fail to carry disorder into the chylopoietic functions; many neuralgias, and other diseases of the functions of animal life, have probably, in this age of gastric pathology, been treated, as if they originated in the abdominal disturbances, of which they were, in reality, the cause.

6. Some pathologists, and especially Dr. Parry,* suppose neuralgias to arise from increased vascularity, perhaps amounting to inflammation, of the neurilema of the nerve, the extremities of which are the seat of the disease. Others suppose the same condition, at the origin of the nerve. In the case just related, the phenomena evidently prove the sanguineous plethora to have been cerebral. The repeated attacks of transient hemiplegia, the partial deafness, the epileptic paroxisms, and, *perhaps*, the loss of smelling, can only be explained on the supposition of irritation and congestion in the brain; and, that the neuralgia was a member of the same family can, I think, scarcely be denied.

7. No part of the body is so largely and variously supplied with nerves, as the face; and no part seems so liable to the disorders which are termed nervous. Several of these bear more or less relation to that form which is denominated facial neuralgia, or tic douloureux, of which the following may be cited as examples:

1. A decayed tooth, without aching, will often excite an acute pain, in various parts of one side of the face, from the chin to the top of the head. Every physician must have met with cases of this kind, which continued for weeks, and simulated most of the phenomena of tic douloureux. Upon extracting the tooth, all the symptoms cease. This is an affection of the same nervous extremities, which are the seats of that painful malady, but it is an affection of those sensient extremities *only;* and the cerebral extremities not being diseased, the complaint vanishes upon removing its cause. It is most apt to occur in persons of a nervous temperament.

* Elements of Pathology, Vol. 1. Art. DCCCLI.

2. Cephalæa spasmodica, or sick head ach is, also, allied to neuralgia facialis. In the paroxism of this malady there is temporary cerebral plethora; and the pain is generally seated in the upper branches of the facial nerves of one side.

3. Cephalæa hemicrania, or periodical head ach, is another member of the group. It is commonly the offspring of the same cause with intermittent fever; but I have several times seen it in persons who, had not been affected with that fever, nor as far as could be ascertained, exposed to its remote cause. Those, however, who have had the fever, are sometimes subject for years to returns of hemicrania. The pain is generally seated in the ophthalmic portion of the great facial nerves. I have no doubt that many cases reported as tic douloureux, have been this variety of head ach. Most of those recorded by M. Vaidy* were evidently of this kind.

4. Some persons, especially the dyspeptic, are liable to a spasmodic twitching of the eye lids of one side, which now and then passes nearly into a temporary paralysis. It is unattended with pain, and, therefore, may be considered as an affection of the motor nerves, only.

5. But a much more formidable disease, and the last which I shall mention, is a palsy of one side of the face and tongue; the affected muscles being precisely those which are supplied with the nerves that are the seat of neuralgia facialis. I recollect to have seen five cases of this disease, entirely unconnected with the muscular phenomena of apoplexy or hemiplegia:—one in a female child; one in a young and vigorous woman, during her first utero gestation; one in an aged lady; one in a middle aged, and another in an old man. The affected side loses its expression; the cheek acquires a smooth and subsiding aspect; the upper eyelid droops, but does not cover the ball of the eye in sleep; the tongue, when projected, turns to the paralytic side, while the opposite angle of the mouth is drawn preternaturally back. The case of the young woman occurred 12 or 15 years ago, and a certain degree of deformity still continues.

* Journal Compliment. December, 1820.

These affections, in their origin, not less than in their seat, seem to me to have an unquestionable relationship with neuralgia facialis, and to the case of Mr. W. Let us now inquire into their pathology.

The membranes, muscles, glands, and other parts of the face, are supplied with nerves in a degree proportionate to the incessant and diversified functions, they are destined to perform. The fifth pair, and the portio dura of the seventh pair are, exclusively, appropriated to them. Of all the nerves of the body, none are more variously and violently acted on by the sensorium from within, and physical agents from without. Now, anatomical researches, especially those of Dr. Gall, have disclosed to us, that about the central extremities of each nerve, there is a mass of cineritious matter, which seems to be little else than a congeries of blood vessels. It is extremely probable that when the nerve is in the performance of its function, there is an increased determination of blood into this cineritious substance, the object of which is to sustain the nerve in its functional orgasm. If then, this orgasm be often and violently excited, that part of the cerebral mass, in which it is inserted, must at length become a point of greater sanguineous fluxion, than the cineritious matter surrounding the origins of other nerves, more seldom thrown into excitation. This, then, is a state of predisposition; and when causes of any kind disturb the cerebral circulation, the nerves, thus predisposed, may suffer in their functions, while the rest escape unhurt. Hence the production of neuralgias and local palsies.

As the face is supplied with different nerves, we may inquire which of them is affected in these diseases.

Mr. Charles Bell, and M. Magendie, have rendered it extremely probable, that sensation and voluntary motion are dependant on different nerves, collected into the same theca. This is undoubtedly true of the nerves of the face, if it be of any part of the body. We may then regard the fifth cerebral nerve as thus compounded. That part which be-

stows sensation, plays an important part in the economy of the face. It imparts a *variety* of sensibilities; giving to the skin that keen perception of temperature, which characterizes it, and enables us to revive the energies and refresh the whole system, by drops of cold water dashed upon the face, in syncope,—by washing with cold water in the morning, or after fatigue,—and by simple exposure to a cool and fresh air after confinement in a close or heated room,—imparting to the teeth an acute sensibility to temperature, and to several agents, which are known to excite in them a lively sensation,—associating the salivary glands with the tongue, when that organ is excited by sapid bodies; and, lastly, endowing it with the specific sensibility, which gives efficacy to such bodies and constitutes it the organ of taste. Upon the retina it probably confers a species of sensibility to light, which causes it to contract when exposed to the rays of the sun, without our experiencing from the exposure of *that* part, the sensation of light, or the perception of colours. In the nares it seems to play another part, establishing the well known relation which exists between the senses of taste and smell, as to the qualities of our food; and finally preserving the scheiderian membrane in such a condition, as enables the olfactory nerves to perform their proper function. In the case of Mr. W. the sense of smelling was entirely lost, and the membrane deficient in mucous. Nevertheless, the nerves of smell had suffered, as I conjecture, no lesion in the brain, but lost their susceptibility; because the membrane on which their sensient extremities were spread, was in a state of disease. I am aware, however, that some facts have been observed, which appear to indicate that smelling depends on the fifth, rather than the first pair; and perhaps, the one just cited, may be of the same class.

In the opinion of Mr. Bell, it is the motor portions of the same nerves that bestow, common, voluntary, muscular motion on the face; and especially sustain the contractions which take place in mastication. The fifth pair are, then, the presiding nerves of the function of mastication; and in

neuralgia facialis the pain is seated in the extremities of the sentient portion of one of these nerves. But is the loss of power in *paralysis* facialis, or hemiplegia of the face, dependant on a disordered state of the motor portion of the same nerve? This leads to the consideration of the function of the portio dura of the seventh pair.

These nerves, as dissection teaches us, are spread over the same parts with the fifth; constituting what would, at first view, seem to be a species of anatomical supererogation. Like others, however, they must have their specific function, and this, Mr. Bell supposes to be the regulation of those facial movements which take place in respiration, and the functions of speech and passionate expression. They are, therefore, in his opinion, not nerves of sensation, nor common muscular motion, but of association; and serve to combine the muscles of the face with those of the chest in respiration.

Now, in paralysis of the side of the face, either the motor portion of the fifth nerve, or this facial respiratory nerve, as it is called by the celebrated anatomist whom I have quoted, must be in fault; and he is inclined to fix upon the latter.* The cases of this disease, which have fallen under my observation, were, chiefly, before Mr. Bell's researches had been made public; and I did not, therefore, analyze the phenomena with a view to this question; but one thing is certain, that they were most conspicuous, in those movements of the face which are connected with speech and emotions of the mind. The tongue, however, when protruded, has constantly manifested defective muscular power in one side, which would *seem* to indicate a lesion of the ninth nerve, as well as the fifth or seventh. This is a nerve of motion, and associated with both the others in its functions; it must, therefore, be inordinately acted on or exercised, whenever they are; and might, hence, be expected to fail under the circumstances which can disturb their functions. Nevertheless, a case

* See his Exposition of the Natural System of the Nerves.

lately reported by Dr. Pickett, of Alabama,* in which a lingual hemiplegia followed the extraction of a tooth from the lower jaw, favours the opinion that it may arise from an injury to the motor portion of the fifth pair.

The opinion adopted, in these reflections on the pathology of neuralgia, is certainly sustained by the case which I have reported; but I am by no means disposed to affirm, that plethora of the *neurilema* of the affected nerve is never the cause of that disease. On the other hand, there are facts which render it extremely probable that neuralgia is sometimes produced in that way. It may arise in both modes; but I am disposed to believe that disturbances of the circulation oftener take place at the extremities, central or sentient, of nerves, than along the intermediate parts; which seem to perform no other function than that of transmitting the sensorial influence. In many cases of facial neuralgia, physicians have persuaded themselves, that the disease was confined to the exterior nervous extremities, and the irritation from injuries of the teeth favours this conclusion; but the occurrence of the pain in a second twig, after the excision of the one first affected, would seem sufficient to prove that the radix of the disease is planted in the brain, or at least in the common theca.

The long continuance of the disease, in some cases, by no means indicates that it is a disorder of the *sensient* extremities of the affected nerve. In the present imperfect state of our knowledge of the anatomy and physiology of the nervous system, it is quite as easy to *conceive* of a sustained and chronic morbid condition of the cerebral, as of the sentient ends of a nerve—perhaps, indeed, easier.

In whatever part of the nervous tissue the congestion, supposed to exist, may take place, I am not inclined to grant that *it* is the first link in the chain of morbid actions. In most, if not all cases, some *previous* change in the medullary matter, would seem to be the cause of the inordinate reten-

* See the North American Medical and Surgical Journal. No. 5. p. 86.

tion, or influx of blood. And still a part may become morbidly plethoric, without *itself* exerting a disturbing influence upon the currents of the circulation. This happens from its vascular connexion with some other part; which, thrown into a state of irritation, may draw upon both, a quantity of blood sufficient to overwhelm and disturb the functions of both. Thus, a cerebral irritation, not at all connected with the nerves of the face, may determine upon the brain, or retain within it, such an excess of blood, as to injure the origins of those nerves, and produce neuralgia or paralysis.

To say that every case of neuralgia, even in its early stages, requires and could be cured by copious bloodletting and other depletions, would be to oppose supposition to actual experience. But it is warrantable to express the opinion, that some physicans have been deceived, as to the inflammatory character of this disease, by the appearances of the parts affected; that others have rashly pronounced it the direct offspring of dyspepsia, and to be cured by curing that malady,—forgetting that dyspepsia, in general, produces its fatal effects, by establishing sanguineous plethora, or inflammation, in some organ remote from the stomach; and, finally, that too many have overlooked the fact, that the brain is liable to a great variety of lesions in its circulation and organization, which can only manifest themselves by the disturbances which they ultimately carry into distant organs; and, thus, that even when the stomach is the organ originally affected, the disease of the face may be the immediate offspring of a cerebral lesion.

ART. II.—*Some account of the Endemic* PURULENT OPHTHALMIA, *of the state of Mississippi, by* JOHN H. SAVAGE, M. D.

PURULENT OPHTHALMIA is one of the diseases of Mississippi, which both from its severity, and the unsettled state of its medical treatment, deserves attention. In the summers of 1825 and '26, it was epidemic in Jefferson county and its vicinity.

SYMPTOMS.—The patient is warned of the approach of this disease, by stiffness and an uneasy sensation in the eyelids, and watery state of the eye. These symptoms generally begin in the evening, and continue 'till the next morning; when a more decided inflammatory condition supervenes, accompanied with great pain and a copious flow of acrid tears. As the night advances, the sufferings of the patient increase; but in the morning, there is a remission which continues 'till the next evening, when an exacerbation takes place, and the night is again passed in sleepless inquietude, and great distress. Sometimes a slight fever is present, but oftener there is no manifest disturbance of the general system. During the severity of the disease, there is great intolerance of light. About the third or fourth day, and sometimes earlier, a secretion of pus takes place. The disease generally lasts, unless arrested by proper means, for ten or twenty days. I have heard of a few cases, in which blindness of one or both eyes, has been the consequence.

ÆTIOLOGY.—The predisponent cause of this disease, appears to me to be a peculiar temperament of the atmosphere, dependant on some unknown cause: the exciting cause is marsh miasma; the proximate cause a congestive state of the biliary system. That the exciting cause is marsh miasma, I infer from the following facts: First.—It prevails in the season of miasmatic diseases. Secondly.—During the winter it occurs but in solitary cases, like intermittent and remittent fevers. Thirdly.—The mode of treatment, as we shall presently see, which is applicable to the latter, succeeds equally well with the former.

That a predisposing cause of a general nature is requisite, seems sufficiently apparent from the fact that, in different years, while the circumstances that favour the developement of marsh miasma are apparently the same, ophthalmia will not prevail as an epidemic, but is almost entirely absent.

Treatment.—This malady has been treated with blood-letting, emetics, cathartics, blisters and the ordinary collyria, with little or no advantage. Experiencing the inefficacy of this method, and referring to the nocturnal exacerbations which constantly occur, I was at length induced to regard the disease, in the language of Dr. Rush, as a misplaced fever, and determined to treat it accordingly. I began by administering ten grains of Calomel at night, and a dose of ol. Ricini the next morning. If fever was present, and the alvine dejections were much vitiated, I continued this plan as long as circumstances seemed to require. I then gave, during a single remission, about six grains of sulphate of Quina, in divided doses. The disease, if not cut short at once by this treatment, lost all its violence. In obstinate cases, an occasional dose of Calomel at night, followed by the sulphate of Quina, in the morning, was found necessary. By this plan, I have never failed in effecting a complete cure in a few days,—generally in two or three. The various collyria, which I have seen employed, appeared to be of no other use than keeping the eyes clean.

SELECTED ESSAYS.

ART. III.—*Observations upon* TRAUMATIC HEMORRHAGE, *illustrated by Experiments upon living animals, by* HORATIO G. JAMESON, M. D. *Surgeon to the Baltimore Hospital.*

[From the Medical Recorder of January, 1827.]

[Our limits do not permit the republication of the whole of the elaborate and interesting prize essay of Dr. Jameson: we must content ourselves, therefore, with the following extract, which will exhibit to our readers the most important practical matter which it contains.—EDITORS.]

"The introduction of the animal ligature has so materially improved the treatment, in the operation of tying arteries, that it becomes necessary to object to the views and practice of Scarpa, so far as this circumstance relates to the subject.

"Mr. J. Bell, Abridg. Surgery, (51,) observes, "The diseased state of the arteries never can explain the difference, in the danger of the two operations, of aneurism and amputation. In amputation of the thigh, we tie the great femoral artery, we tie also the profunda and its muscular branches; we perform amputation daily, and we tie many great arteries in each amputation; each ligature is seen moved and raised up from the face of the stump, at every pulse of the artery; the stump remains open. These arteries continue for weeks to bear the whole force of the circulation unsupported, yet they seldom give way." Our author goes on further, in speaking of operations for aneurism, to say, it is an operation never performed, but by surgeons of the first eminence, and yet, perhaps, more died than have survived it. He then reminds of the fact, that Mr. Hunter lost some of his patients, and that Mr. Pott, in one case, was obliged to amputate on account of secondary hemorrhage; that in other instances, where patients were ultimately saved, they were endangered by secondary hemorrhage, &c. We are well aware of the truth

of the remark of Dr. Smith, in a foot note on the above paragraph, that "the success of the operation has been much greater of late." Those failures have been very generally, perhaps universally attributed in greater part to detaching the artery too much, and although we readily give our assent, in the general, to this opinion, yet, we must not forget the fact that Mr. Hunter himself became convinced of the importance of leaving the artery as much as possible in situ, and still cases of secondary hemorrhage continued to occur. Too much importance was, therefore, given to this part of the operation, though as a part of the measures necessary for insuring success, it should never be lost sight of by the surgeon.

"The profession, having found that this circumstance was not sufficient of itself to ensure success, with a zeal commensurate with the importance of the subject, instituted, with much judgment and industry, experiments upon living animals. Among these, Dr. Jones did honour to the profession and himself; and by the introduction of smaller ligatures, applied with special care, he certainly much improved the practice; and rendered the dangers from secondary hemorrhage much less. He, however, instead of ascribing his greater success to the right cause, attributed it to the circumstance of his ligatures cutting the coats of the arteries. The imposing nature of his experiments, and the greater success attending his practice, was well calculated to carry conviction as to the truth of his theory; but if he and his followers had stopped to weigh the matter well, they must have seen a complete refutation of such an opinion in the practice of every day; arteries were healed when torn off, when cut out by mortification, when included in a mass of flesh surrounded by ligature. In addition to these effects from direct violence, the vessels were seen obliterated by the pressure of tumours, aneurismal and others, &c. Besides, although the smaller ligatures improved the practice, still they did not wholly remove the risk of secondary hemorrhage. This disappointment led to other interesting experiments, by Scarpa, Crampton, &c. some of whom not only were convinced of the wrong conclusions of Dr. Jones in this particular, but that cutting the coats was in many instances prejudicial. Their various experiments, and the results are too generally known to require an expose of them here.

Let it suffice to say, that their theory was correct, but their practice wrong, or inefficient. They aimed at obliterating arteries, without cutting their coats, by which they said the vessel was weakened, and too much inflammation liable to supervene, by which union by the first intention might be prevented or disturbed, before the parts were sufficiently united; i. e. by superinducing suppurative inflammation, the vessel might be prevented from healing by the first intention. They discovered that they could only effect their purpose by large or flattish ligatures; these would, after a certain period, become sources of every mischief; and, therefore, they were removed as soon as the vessel was supposed to be in a state to bear it, (to wit,) about the fourth day. This, then, is the extent of Scarpa's views, and we have already said, that we consider his method superior to that of Jones in the larger arteries.

"We are not able precisely to state the views of Dr. Physick upon this subject, but to him is certainly due the merit of introducing the animal ligature into practice. We will endeavour to do the Dr. justice; if we fail in it, it shall not be wilful. We have been creditably informed that Dr. Dorsey, acting under the auspices of Dr. Physick, was in the habit of cutting his ligatures from chamois leather, and rolling them on a slab to make them round. This, to us, is a clear proof that Dr. Dorsey at least, did not coincide with Scarpa in opinion, but with Jones. And we know, experimentally, whatever may have been the theory of those gentlemen, that a leather ligature rendered hard by rolling, or close drawing through our nails, is liable, if applied tight, to cut the inner coats. This practice, therefore, was not suited to the views of Scarpa, Crampton, &c.

"If we are right in the opinion which we have just expressed, Dr. Physick is entitled to the credit of bringing into use the best ligature, as to the material, but here his claim is at an end. The following results seem to have been attained:—The experiments of Hunter and Jones, show the importance of the vasa vasorum, and consequently the advantage of leaving arteries to be tied, as much as possible, in situ. Scarpa and his associates in opinion, have shown the superiority of the method of applying ligatures which will not cut, nor bruise, the coats of the artery; and the advantage of removing them before the sup-

purative inflammation is produced by their presence. Dr. Physick and Sir Astley Cooper, have shown the advantages of using a substance which will serve as a ligature 'till the artery is obliterated, and be speedily afterwards in the power of the absorbents, so that they will remove it. Now, in the practice of Hunter and Jones, although they were aware of the importance of preserving the vasa vasorum, yet, we see them cutting off the true vasa vasorum, and relying chiefly on the vessels subsidiary to them. The disadvantages of this method, then is, that they weaken the arterial coats, destroy the circulation in the true vasa vasorum, and thus produce too much inflammation. This method, nevertheless, will succeed very well in vessels of moderate size, but in the larger arteries it will not, because large vessels when tied, fall into puckers, the coats are cut irregularly; the cellular coat is too weak to confine the tissue arteriel; and consequently its elastic power will raise some of the cut folds above the ligature, drawing the yielding external coat with it, the sides of the vessel between the ligature and the heart will not be in contact; no union will take place, and secondary hemorrhage will, sooner or later, follow the use of such a ligature. We have two cases in point, those of Dr. Mott, and Dr. Græffe, upon the arteria innominata. In the practice of Scarpa and others, pointed out above, all the objections to that of Jones are avoided, hence the preference of the former over the latter. But strong objections grow out of the circumstance that we cannot heal the wound by the first intention. On the fourth day, we are to cut the ligature and remove it. This part of Scarpa's practice is exceedingly objectionable, because the wound must be kept open, and to effect this, we must often introduce some extraneous body into the wound to prevent its healing before the fourth day; and no dexterity of the surgeon, nor ingenuity in the construction of an instrument to effect this purpose can be devised, which will obviate considerable pain to the patient, and perplexity and apprehension to the surgeon in cutting the ligature. We have cut for the femoral artery in a patient in whom there was fully one inch of fat over the artery; in such, and similar cases, there would be much difficulty in cutting a ligature.

"A decided preference must be allowed to the method of Physick and Cooper, as it involves facts and principles which free it from all the objections to which the methods of Jones and Scarpa are liable. But notwithstanding the facts and principles afforded by these celebrated men, they have left the subject susceptible of improvement; and to point out, and establish upon substantial and solid ground, some very material improvement in this department of surgery, has been the chief aim and design of this essay.

"We will now proceed to point out our own views, and endeavour to support them by experiment.

"1. We believe that if an artery is sufficiently healthy, to admit of its obliteration by adhesion of its sides, it is best done by a ligature which will neither cut its coats, nor strangulate except in parts, the true vasa vasorum, so that the continuity of the vessel shall not be destroyed, although we obliterate its caliber.

"2. We believe that if an animal ligature of the proper kind, be properly applied, the vessel will be obliterated, the wound may be healed by the first intention, and the ligature will not cause suppurative inflammation; but in due time, being dissoluble, the whole will be removed by the absorbents. There will be no breach of continuity in the artery, the materia arteriarum will be removed, and the vessel which during the state of inflammation and effusion of lymph, was converted into a cord, will pretty soon afterwards, be resolved into a flat string of white cellular structure.

"Experiment I.—The carotid artery of a sheep was laid bare, and a common suture needle was passed through the artery, armed with a tapering ligature, the largest end of which was about three lines in width, and its thickness that of pretty thick buckskin. It was cautiously drawn through nearly to the largest end, both ends were then cut off, about three lines from the vessel. Not a drop of blood escaped. The animal was killed, twenty-two days after the experiment, in good health. The artery was greatly thickened in its coats, about an inch above and below the seton.—No traces of a wound could be seen on one side of the artery; on the other there was a slight depression, in which lay a little yellowish matter, but which, on examination, proved to

be a small part of the buckskin remaining within the vessel, and reduced to a pulp, by its mixture with a portion of lymph. The sides of the vessel were closely in contact, but not quite united, a flattish opening was seen, through which a very small probe might have been passed. There is no doubt that this vessel, which was thus gradually contracted in its caliber, would in a short time have been quite obliterated; and we are quite certain no blood circulated through it, at the time the animal was killed.

"EXPERIMENT II.—The jugular vein of a sheep was surrounded by an animal ligature, rendered firm by drawing it, after cut from the skin: at the end of six days the animal was killed, the ligature was still round the vessel, but upon scraping it gently with a knife, the skin was found as thin as tissue paper. The vein lay in puckers or plaits within, and there was no union of the coats under the ligature. Above the ligature the vessel was inflamed, and distended by a coagulum which adhered to its sides, and was about two inches long. The vein became thickened a little below the ligature, and soon assumed the size of the vein when distended with its blood, but was solid; when cut across it had the appearance of a transverse section of the human œsophagus, though traces of its caliber could be seen, yet it would not admit the end of a small blow pipe.—No pus in any part, but lymph still exuding.—In short the vessel was completely obliterated, without union of its sides, but by thickening of the coats, as represented by Mr. Travers. It is evident here, there would have been no breach of continuity of the vein, and in a few days, the small remains of the ligature would have been removed.

"EXPERIMENT III.—The left carotid of a dog, was laid bare and transfixed with a buckskin string, as in experiment first. The animal continued playful, and although there was considerable swelling of the throat, it eat well every day. This animal was killed on the twenty-fifth day after the operation. No traces of any violence remained in the parts 'till we came down upon the artery, which was slightly contracted, somewhat thickened, and hardened in its coats. Small red dots were seen here and there, within the artery, and on the side next the heart the inner coat was a little fuzzy. On either side of the vessel were seen two little yellow knobs, which proved to be the two ends of the liga-

ture, in the state of yellow pulp. The knobs were completely enveloped in a strong membranous capsule; the same capsule enclosing both knobs, and its fibres plainly seen crossing over the artery. This arrangement of the capsule seemed to have the effect of drawing the button-like knobs together, and was thus closing the vessel. If any circulation had remained, it must have been very little, as the artery was so contracted just where the string passed through it, as to be in contact with the inside coat of the artery. On the lower side where the coats were not cut, in splitting open the vessel to examine its interior, there was an actual adhesion of the leather to the inner coat. The string was softened into a pulpy consistence, and near the inside of the vessel was evidently covered with organized lymph, and extending along its edge on one side, some distance. When the string was gently pulled, one plainly saw a delicate membrane passing off from the artery, and ending on the string, in fringed extremities. This attachment of the vessel by a new formation, existed on both sides of the artery, and also, at its inner and outer sides. The capsule covering the knobs or ends of the string, was fully equal in strength to the outer coat of the artery, and therefore, there was no tendency to hemorrhage.

"EXPERIMENT IV.—We tied the left carotid low down, in a sheep; at this part, the vessel lay deep; and a good deal of violence was done to the parts, before the artery was fully exposed. It was detached from its connexions about an inch and a half. This animal was extremely wild, seemed unwell, and would not eat freely before operated on—scarcely at all afterwards. An animal ligature was applied tight. On the sixth day, this animal died; the parts were in a state of gangrene, and therefore little information is to be had from our examination. We remarked that the ligature was very tight, had cut the inner coats nearly all round; no adhesion had taken place. We cite this case to show that a *drawn* buckskin ligature will cut the inner coats, and to show that where the inflammation runs too high for the production of lymph, the ligature will not readily dissolve.

"EXPERIMENT V.—We exposed the jugular vein of a sheep, which was unusually large, say three-fourths of an inch in diameter. A tapering string of soft buckskin was passed through it, as in experiment I. At the end of six days, this

animal, being the subject of experiment IV., died. On examination, the vein was affected with gangrenous inflammation, but had contracted at least two thirds of its size where transfixed. Some lymph surrounded the ligature, of a reddish colour, giving it much the appearance of a pulpy mass of flesh. The sides of the vein closely embraced the leather, and there was plainly to be seen, inside of the vein, membranous shreds passing off along the string. This vessel would doubtless have been obliterated, and no risk of hemorrhage existed.

"Experiment VI.—We tied the jugular vein of a dog, with a drawn animal ligature. At the end of nine days the animal was killed, and the following appearances presented, the animal not having been sensibly injured in its health. The vein immediately below the ligature, though somewhat puckered, was healed by adhesion of the inner coat, according to the views of Mr. Hunter; above and below, for nearly an inch, the coats were greatly thickened. The inner coats were divided, and the two ends of the vein separated more than half an inch. There was no coagulum on either side of the ligature, nor any appearance of inflammation. About half an inch of the vessel, on both sides of the ligature, was greatly thickened. The ligature below the vein was completely removed, and a pulpy yellowish little button-like fragment of the ligature, remained on either side of the vessel, but detached from each other, and surrounded by a quantity of lymph. No appearance of pus. The parts around were not inflamed nor diseased. The appearances in this case exactly resembled the drawing in Mr. Traver's thirteenth plate.

"Experiment VII.—The superficial femoral artery of a sheep, a vessel about the size of a crow quill, was dissected up a small distance, and torn out. The animal did not seem to mind it; there was but two or three teaspoon-fuls of blood. We found this artery contracted much more than a dead artery, and it had a sort of writhing motion when handled, convincing us of its vitality. When examined after the death of the animal, the artery was filled by a coagulum about an inch long, and it was contracted and hard, like the vas deferens; the cellular tissue around it somewhat injected with blood, but not so much as to produce any pressure upon the artery.

"EXPERIMENT VIII.—A number of experiments were made upon a dog, which had been bled to death the day before; ligatures of various kinds were applied, from just below the arch of the aorta to near the iliacs. And the following results were obtained:

"1. Ligatures of four common coarse sewing threads, twisted slightly into a cord, would not cut the inner coats.

"2. Ligatures of two threads applied tightly, not only cut the coats entirely around, leaving nothing but the thin outer coat, but by cutting the vasa vasorum, a small portion of blood escaped, and formed a red line, which appeared on removing the ligature.

"3. Buckskin ligatures, of common size, *drawn through the nails of the thumb and forefinger*, cut the coats more or less.

"4. A flattish ligature, *about two lines in width, not drawn through the nails*, but applied tight, neither cut nor bruised the inner coats.

"5. Ligatures of buckskin, of common size, *not drawn, applied tightly*, did not cut the inner coats. But all kinds of leather ligatures could be applied, with care, tight enough to bring the sides of the artery into contact, without cutting the coats. In every instance, the vessel was much puckered, but still the sides, in all cases, lay pretty well in contact, but where tied with the cutting ligature, certainly no better than when they did not cut. Indeed, we thought there was a preference, in this respect, in favour of the soft animal ligature loosely applied. We have practised these experiments upon the large arteries of human subjects, and find no difference, except that the coats of the human kind do not so readily give, under the animal ligature, and with any tolerable prudence in the application, they will not cut the inner coats at all.

"We trust, we may now venture to assert, that we have arrived at the following important conclusions: 1. Hunter and Jones were right in advising us to take care of the vasa vasorum. 2. Scarpa, Crampton, Travers, &c. were right in objecting to cutting the *tissue arteriel*. They did not succeed, however, in devising the proper means of securing the intention of obliterating vessels without destroying their continuity. 3. Physick, and Cooper, by employing a ligature having the property of dissolubility, greatly improved our practice, whatever might

have been their theory. Physick's ligatures, first used in 1814, have done much good. Cooper by tying, in 1817, the femoral artery of a man aged 80, and healing the wound by the fourth day, shows the superiority of this method over that of Scarpa.

"We aim at a combination of the improvements of all these parties; we say, do not disturb the vessels subsidiary to the vasa vasorum—do not cut off the true vasa vasorum, nor strangulate them by your ligature. Tie the artery with a buckskin ligature very soft, and a little broader than the thickness of the skin; take care not to tie it too tight. Having done this, you may expect that the wound, in many cases, will heal by the first intention; where this fails there will be no suppuration about the vessel, and the wound will very soon close. You may expect a capsule to surround your ligature, if you have not disturbed the capilliary vessels more than can be avoided. Or the vessel will be surrounded by an abundance of lymph, and the ligature dissolved.

"In support of the above declarations we have to offer, in addition to the foregoing experiments, the following result, of our surgical practice. We have used the animal ligature for six or seven years; we have used it in many amputations of the limbs, and of the mamma. We have once tied the carotid—once the external iliac—twice the femoral—four times the radial—once the posterior tibial—seven times the spermatic; and, in no instance have we ever had secondary hemorrhage; never have we had a ligature to slip—we have never seen any thing of our ligatures after their application, and, often, indeed generally, our wounds have healed by the first intention.

"Our experiments lead us to believe that we shall improve surgery, in cases of aneurism, by passing a seton of buckskin through the affected artery, instead of tying it. That in this way we may most safely obliterate a varicose vein. And, further, we should not hesitate to try the same method in aneurismal varix, from a wounded artery in blood-letting. It will be observed, however, that we are in this paragraph offering our opinion without having tested it in the human body. We shall so far as possible ascertain its safety by further experiments, upon living animals, as soon as time will permit.

"*In the application of the ligature we may have occasion for the following instruments.*—For securing arteries, in amputations, the forceps and tenaculum have been spoken of, by many, as being equally useful. We have a decided preference for the tenaculum, and have to remark, that very often, there is not sufficient attention paid to the pointing of this instrument; a dull or clumsy tenaculum will greatly hinder the most dexterous surgeon, in taking up arteries of small size. We also prefer the small hooks, found in common pocket cases, to those, more straight, put into amputation cases. The former are more convenient, because a ligature looped about its shaft can be slipped most easily over the point—the latter is generally, in large arteries, passed too far through the vessel, and a difficulty occurs in slipping the noose or loop over its point. To avoid the unseemly appearance of the blood spirting over the surgeon and his assistants, in arteries that cannot be obstructed by the tourniquet, the surgeon should hold the fore finger of the left hand over the mouth of the bleeding vessel, a little above the point of the tenaculum, which he holds in the right hand; and the assistant should learn to pass the loop of the ligature over, and below the point of the tenaculum, and direct it to its proper situation around the artery, which, in all cases, must be as close to the divided parts as possible; and he should do this without seeing either the mouth of the vessel, or the point of the hook, which is readily done by the sense of feeling, after a little practice. S. Cooper has given a drawing of a spring tenaculum designed to enable the surgeon to tie an artery without assistance. We believe this instrument will be found extremely limited in its use. Admitting that we can hold the vessel better with it than the common instrument, it will be found on trial, that, owing to its two curved points turning inwards, we could seldom get hold of the artery, should it be at all retracted.

"Dr. Physick's aneurismal forceps is a valuable instrument, but in many instances, a curved needle, having an eye in its forepart, like a sadler's needle, and such as was used by Cheselden, for applying ligatures to the enlarged tonsil, answers equally well. They must not be pointed, so as to endanger transfixing the vessels. Small silver probes with eyes, may be used, in most cases, of applying ligatures to uncut arteries in situ. But,

after all, we are satisfied, from actual experience, that Physick's forceps armed, with a curved needle is the best instrument. The tenaculum, the curved needle, and the forceps for holding the needle, are the only instruments wanted in taking up the arteries, excepting the common dissecting instruments, which should be in the best possible order, as the neatness and expedition of the operation will often depend much upon this circumstance. The pain will be lessened, and both the surgeon and patient will in these cases, gain much by the operation being done with reasonable expedition; we have always remarked that delay incommodes the surgeon, by suffering the cellular tissue, &c. to become injected with blood, and consequently more or less opake, by which the parts are rendered more obscure.

"*Of the advantages and disadvantages of the different kinds of ligatures.*—We perfectly well remember to have seen ligatures applied, by practitioners of eminence, who had graduated at Edinburg, about the middle of the last century. They were remarkable for their huge size; for large arteries, not very much unlike the twine seen around our writing quills. Yet, clumsy as they were, they possessed one advantage; they would not, in the first instance, cut the coats, and as in amputation the end of the artery was to be cut off, by ligatures of every kind which have been used, except the animal ligature, they answered very well, except so far as by their roughness and bulk, they irritated, and much increased the inflammation of the stump. But in cases of aneurism, these ligatures would not answer, unless they were cut away as soon as union was effected, and it is probable, in many cases, suppurative inflammation would have been excited by them; and we believe, actually did occur in the practice of Mr. Hunter, from such ligatures. Mr. Abernethy, in his work, recommends pretty large ligatures, because they will not cut the coats of the vessels; but, as we have already said, unless they were cut away, undue irritation and inflammation would follow, before they would cut their way out. Scarpa tells us, speaking of the application of ligatures to the carotids of two sheep, that "in one *he* used a flat ligature, and a small cylinder of linen, covered with cerate, between it and the vessel;" and upon examination, "the carotid was found covered, for the space of an inch and a half around the ligature, with a glutinous

lymph," and "the internal coat of the artery immediately under the cylinder, far from being livid and contused, was sound, but thicker and softer than in the natural condition." Further, "the points of the surface of the membrane kept in immediate contact by the ligature, were united by vascular inosculation. Here is a clear proof, and is supported by several other experiments, that the vessel was obliterated; and that the true vasa vasorum were neither cut, strangulated, nor inflamed, beyond the degree necessary for effusion of lymph, by which the artery was to be closed. In the other sheep, the coats were cut by a thread ligature, the vessel was inflamed, and a tendency to suppurative inflammation showed itself on the fourth day. Now, while these experiments serve to show the importance of preserving the parietes of arteries, they show with equal clearness, the advantage of a dissoluble ligature, which while it served the purpose of obliteration, was at the same time taken away by the natural operations of the absorbents. We trust we have already satisfactorily shown, that soft buckskin ligatures, applied moderately tight only, and not so small as to cut the coats, will wholly supersede the use of the complex measures necessarily attending the roll of linen, when applied to deep seated arteries, for the purpose of saving the coats from the ligature. And all ingenuity employed upon the construction of instruments for cutting ligatures, and removing them on the fourth day, in which Scarpa shows his usual acumen, becomes wholly useless, now that we have easily within our reach, a substance which will scarcely act as an extraneous body, when put around an artery; and after securing for us its office, is most safely cut away by the living absorbents, whereby we are enabled at once, with confidence, after tying an artery, to close the wound, as soon as we have applied our ligature, and give ourselves no further trouble about the result, so far as the ligature is concerned.

"Of the fine silk ligature, and of the small flax ligature of Mr. Lawrance and Dr. Jones, we have already spoken, under the article pathology. We have only to say of these, that if our views of the animal ligature are correct, and we trust this matter will be decided, ere long, in favour of our opinion, nothing can be pleaded in support of the fine indissoluble ligatures. Whatever may be thought of the method of Œtius and Celsus,

revided by Mr. Abernethy, of applying two ligatures, and dividing the artery between them, we trust we have shown, that as the animal ligature properly applied will not destroy the continuity of the vessel to which it is applied, no possible advantage can arise from dividing the vessel, and to detach enough of the artery to admit two ligatures, added to a division of the vessel by the knife, in the first place, must greatly increase the pain of the operation, and, in the second place, before the ligatures come away, both ends of the artery must be cut off by attrition, or suppurative inflammation.

"In cases of amputation, we believe that no ligature will bear a comparison with one of soft buckskin, of moderate thickness, cut from the skin about twice as wide as thick, and drawn between the nails of the thumb and forefinger, so as to make it more solid; but it should never be made round—this would cause it to cut the coats, make it less dissoluble, and more apt to slip off, all which we ascertained by actual experiment."

ORIGINAL RETROSPECTIVE REVIEW.

Commentaries on the principles and practice of Physic. Illustrated by Pathological Tables and Practical Cases. Being an attempt, on a New Plan, to connect the several Branches of Medicine, and to place the Practice of it on a rational and solid Foundation, &c. By James Makittrick, M. D. London and Edinburgh, 1772.

Elements of Pathology and Therapeutics; being the Outlines of a work, intended to ascertain the nature, causes, and most efficacious modes of prevention and cure, of the greater number of the Diseases incident to the human frame, &c. By Calvin Fillier Parry, M. D. Bath and London, 1825.

The object in reviewing a new book, is to point out its errours, and to promote the dissemination of its truths: the object in reviewing an old work is to disentomb its valuable facts and suggestions, from the mass of perishing matter by which they are buried up; and place them, a second time, before the profession to which they relate. When this is done, we often find them, more or less palpably, the archetypes of much that we admire in more modern writings. The works, which are the subject of this article, afford evidence of the justness of these remarks. Between the two there are some curious historical analogies. Thus, both authors lived and practiced the profession in the same city—*Bath;* and each wrote a single volume on General Pathology, and promised another on the practice of Medicine, which was never written. In the matter itself, however, there are coincidences, of a more important character, and the number is so considerable, as not to leave us in doubt, that the comparatively obsolete work of Dr. Makittrick, was to a certain extent the model of Dr. Parry's, although a reference to the former, is no where to be found in the latter work.

Before proceeding to exhibit the resemblances of which we speak, we shall enrich our pages with some extracts from Dr. MAKITTRICK's book, which, although written more than half a century since, are worthy of a place, we might say of many of them, occupy a place, in our latest and most approved systems of Pathology.

The introduction abounds in judicious reflections on the study of the profession; and the best means of distinguishing truth from errour. Among them we observe a paragraph which cannot be too often read, by the younger members of the profession, in a new country, where models of excellence are comparatively rare:—

"From what has been said in the preceding pages, it is evident that the science of medicine is very extensive and complicated; and that the attainment of that degree of knowledge that is necessary for the practice of it, must depend on great study and application, and great sagacity and steadiness in discerning, comparing, and reasoning upon the causes and nature of diseases.

"It is therefore incumbent on the medical man to dedicate his whole time and attention to the improvement of his profession; amusement, pleasure, and dissipation are totally incompatible with his duty; and as his charge is most important, he ought to spare no pains to qualify himself for doing his duty." p. 32.

The following sentence displays great accuracy of observation:—

"If a strong man is guilty of debauch, this occasional cause may produce a violent fever; but it will be in some measure different from the fever of a young and plethoric person who has been guilty of the same excess; and the difference will be still greater, if the same cause produces fever in a delicate woman, or a person of a lax bloated habit. Here the diversity arises from the habit of body; but it may also arise from the cause either occasional or proximate." p. 27.

The body of the work is divided into six books. We shall not attempt their analysis, but transcribe such paragraphs, as may seem most worthy of notice. That which follows, differs but little from the best views of the profession in 1827.

"All the functions of the body are performed in consequence of the application of natural stimuli to the several organs: thus the blood stimulates the heart to contraction; the air, by its bulk and expansion, forces the lungs to expel it by expiration; the blood, distending the sides of the arteries, stimulates them to contraction; and in like manner every other

organ acts, when excited by its peculiar stimulus: but such stimuli could not act upon these organs, any more than upon the dead body, were they not under the influence of the brain and nerves." p. 15.

His 10th proposition, for which he was evidently in a great degree indebted to his preceptor Dr. WHYTE, will perhaps never be superceded.

"There is a certain consent or sympathy established between the sensible parts of the body, by means of which, when a single part is irritated, it sometimes agitates and disturbs the whole body; or at least affects a particular organ, sometimes at a considerable distance from it. This wonderful property of an animal body, depends solely on nervous influence, and often extends its effects to the most remote parts of the circulating and secretory systems: and though it probably takes place, though imperceptibly, in health, and may thereby be very instrumental in rectifying small deviations from health; yet it is most remarkable in a diseased state of the body, being probably very instrumental in the production, increase, and termination of diseases; and in increasing and extending the effects of remedies." p. 23.

From his illustration of this proposition, we are tempted to make the following extracts, in both of which we see principles that are promulgated by certain writers of the present day, with a zeal as great as if they had been suggestions of their own.

"When a cold and moist atmosphere acts upon the surface of the body, it is probable that besides the change of determination in the humours, the heart and intestinal canal may also be disagreeably stimulated in consequence of their sympathy with the nerves of the skin; as in fevers, diarrhœa, &c. from catching cold."

"Were there not a sympathetic connection established between the various parts of the body, a remedy could only act on the organ to which it is applied; but daily experience shows that whilst a remedy is in the stomach, its effects are extended to every part of the body, as is the case with emetics, cathartics, sudorifics, opiates, &c.; many instances of which will be given when we come to treat of the occasional causes of health and disease." p. 26—p. 27.

In the closing part of a note, on "Diseases of the simple fibre," p. 90, we observe a sentence which bears a striking similitude to the fundamental principle of the *new* Italian doctrine of Tommassini.

"Thus, as anger is a morbid stimulant, so grief is a morbid sedative: and as excess in the use of fermented liquors is a preternatural stimulus, so a total abstinence from them, or an improper use of thin watery drinks, may be preternaturally sedative. In the prevention, or cure of

diseases, therefore, much of the medical art consists in mitigating morbid stimulus by proper sedatives, and removing the bad effects of morbid sedatives by proper stimulants." p. 90.

The sentences which follow, on dependence of function and on sympathy, as means of propagating diseases through the system, deserve a place in all treatises on pathology.

"All the functions depend on each other; if one is disordered, the rest must suffer in a greater or less degree, as is evident from physiology: hence a fruitful source of diseases." p. 44.

"Not only many of the most violent symptoms of diseases are produced by sympathy, but it also frequently becomes the means of creating new diseases." p. 45.

On the subject of temperaments, as predisposing to, and diversifying the character of diseases, Dr. M.'s book is peculiarly copious and valuable. On the influence of the nervous system in modifying the constitution, and giving origin to temperamental differences, he has these sensible and general observations:

"In health there is a certain harmonic proportion obtains between the vital and nervous systems, and the circulating fluids; and the difference of temperament seems to depend on this proportion. *Boerhaave* has remarked this difference, but considers the body rather as an hydraulic than an animated machine. All the functions of the body depend upon motion, the nerves are the primary agents, and upon the degrees of strength and regularity with which those functions are performed, relative health must depend. It is the state of the nerves therefore that must stamp upon the human body the temperamental character; for upon them the state of the solids, and the proportion and quality of the fluids, must in a great measure ultimately depend. Thus in a strong man, it should seem that the nervous power is much greater than in a delicate woman, though in the latter it is apparently more predominant; but the reason is, that in the former it acts regularly and uniformly, and therefore being equally distributed, its influence is not remarkable in any particular organ or function; whereas in the latter, being too weakly exerted in some organs, and in all irregularly, its influence in others will be apparently greater than it ought. Hence it is that the health of the strong man will be more steady and permanent, in the delicate woman it will be the reverse; for health consists in an uniform and regular performance of the functions." p. 52—p. 53.

It was a favorite idea with Dr. M. that the nervous and sanguiferous systems exert upon each other a great number

of reciprocal morbid influences. He ascribes to increased, diminished and depraved sensibility, the power of disturbing the circulation of the parts in which any of those changes may be induced; and on the other hand observes, that "when the circulation becomes irregular in persons of an irritable habit, every slight degree of it will often exceedingly disorder the nerves of particular vessels or viscera; when they are either stretched suddenly, and to a painful degree, by an over proportion of blood thrown upon them; or when they are suddenly deprived of that moderately distending power which keeps them in due tone." "Hence we may account," continues he, "for many of the symptoms in irritable and plethoric patients, from the distension of the vessels in particular parts of the body." p. 114—p. 115.

The succeeding page, contains a more extended and emphatical assertion of the same influence, with a special application of the doctrine to the fevers denominated nervous.

"But it often happens that from irregularity in the distribution or determination of the blood, the distension is too great in some vessels or organs, and deficient in others. Hence the alternate rigors and flushings, and the great inequality of the pulse and excretions, and all the other symptoms, not only in nervous fevers, but in chronic diseases. As nothing fatigues and weakens the nerves and moveable fibres so much as the quick succession of these extremes of distension and relaxation of the muscular fibres of the heart and arteries, by the inequality either in the bulk or the velocity of the stream of circulating blood; so we find that the debility of both is always in proportion to the violence or duration of these paroxysms: hence also we may in part account for the great debility in fevers, though not strictly nervous; the whole course of this class of diseases, from the commencement of the rigour, to the last constitutional efforts to establish a crisis, consisting in nothing else than repeated irregularities in the distribution of the fluids, some more, and some less permanent; and upon this circumstance chiefly depends the nature and diversity of all the symptoms." p. 116.

Again, in pages 118 and 119, we have the following:

"Depraved sensibility is often an effect of some irregularity in the distribution of the blood in the vessels of the abdominal viscera, especially in persons who were not previously of an irritable habit; but in the irritable it is more frequently a cause by inducing frequent and severe spasms. Thus women are subject to symptoms from depraved sensibility,

about the time the menstrual flux is about to cease altogether; and hypochondriacism in men advanced in life, often proceeds from obstructions of the abdominal viscera, and suppression of the hæmorrhoidal flux. In these cases the spasms produced by irregular circulation increase it, and tend ultimately to rivet the diseases and symptoms arising from it." p. 118—p. 119.

Further on, at pages 196–7, we find the same doctrine presented in a physiological dress.

"Such is the sympathetic harmony between the heart and arteries, and the nervous system: that a vigorous exertion of the vital powers, is always accompanied with an adequate firmness and regularity of nervous influence in general; for I do not here take notice of the excessive or depraved sensibility of particular organs, which may be either constitutional or accidental: and on the other hand, a strong nervous system is a certain indication of strong vital powers.

"It is this proportion which constitutes the difference of temperament, and of the various degrees of health in different men. Hence in strong men, the nervous system being neither too irritable nor torpid, the circulation is steady and regular; if the nervous system is too irritable, the vital powers will be languid and unsteady, and liable to be excited, or depressed, by every slight cause; as experience shews to be the case in infants, and delicate nervous women: should the nervous power be too small, and inclining to torpor, the circulation will be tardy, sluggish, and weak, as we remark in persons of gross habits, and in extreme old age.

"Hence from the state of the nervous system, we can always determine the state of the vital powers, and of the solids in general; and from the state of the pulse, which is the index of the vital powers, we can form a pretty exact judgment of the general state of the nerves."

"When the vital powers and circulation are strong and steady, the fluids must be properly mixed and assimilated, and sufficiently condensed for every purpose: and the reason is obvious; because it is the vital powers, or circulation, that give the fluids all their properties; so that in proportion as the circulation is weak, or in any respect irregular, the blood must in the same degree degenerate from an highly healthy state. Thus the blood of the lax and irritable habits, is not so well prepared as that of persons in high health." p. 196—p. 197.

(TO BE CONTINUED.)

SELECTED REVIEW.

"*The Lectures of Sir Astley Cooper, Bart. F. R. S. Surgeon to the King, &c. on the Principles and Practice of Surgery; with additional Notes and Cases.* By FRED. TYRRELL, Esq. *Surgeon to St. Thomas's Hospital, and to the London Ophthalmic Infirmary.* Vol. 1. pp. 352. 1824.

"The first volume contains twelve lectures, and embraces several important subjects, including irritation, inflammation, suppuration, ulceration, gangrene, injuries of the head, &c.—We shall glance at these in order laid down.

"I. *Irritation.*—The study of this phenomenon is considered by Sir Astley as the foundation of medical science. The doctrine of irritation teaches the immediate and remote effects of injuries, and is, in fact, a subject of immense extent, both in surgery and the practice of physic. In the outset, Sir Astley takes occasion to allude to *sympathy*, an expression which it is fashionable among sciolists and closet practitioners to laugh at, as a term used to cloak our ignorance. But the same might be said of many other doctrines and terms in our art. For instance, every one knows what is meant by *irritation*, yet no one can explain the rationale of it. We see the irritation of a splinter produce tetanus, but who can tell us the *modus agendi?*—So we find that if cold water is thrown on the lower extremities, a contraction of the muscular fibres of the intestines takes place—and we say it is by *sympathy*. But because we cannot explain *how* this takes place, the term sympathy is laughed at. It is not ridiculed, however, by the eminent author under review.

"The real nature of sympathy is yet unknown, but we are acquainted with many of its effects; and, as an example, we may give the communication which exists between the uterus and breasts; as the former is impregnated, and the various changes proceed in it during the period of gestation; so corresponding alterations are proceeding in the breasts, the

glands enlarge gradually, the nipple becomes elongated, and the secretion of milk commences; thus, before the child is born, nature has carefully provided for its future support. Many other of the natural functions of the body are supported upon the same principle; as sneezing, which is a sympathetic action between the nose, velum palati, and the abdominal muscles, instituted to remove causes of irritation from the nose: coughing, which is a sympathy between the larynx and abdominal muscles: breathing and the expulsion of the fæces are also sympathetic functions, and with these a multitude of other examples might be given." 3.

"It is doubtless through the agency of the nerves that most of the phenomena of sympathy are produced, and many ingenious explanations have been given of individual instances, by Mr. Bell and other physiologists, but there are numerous other instances where the connexion of nerves gives but a very unsatisfactory solution of the question.

"In some instances," says Sir Astley, "the course of irritation is from the irritated part to the sentient extremity of the nerve, as the pain experienced in the knee and foot from a disease of the hip; or the pain in the little finger and half of the ring finger, when the ulnar nerve is struck at the elbow: injuries of the brain produce vomiting, their influence being imparted to the stomach through the medium of the eighth pair of nerves. In other cases, the course of sympathy is from the affected part to the origin of the nerve; thus pain in the loins is consequent on diseased testicle; or pain between the shoulders from affection of the liver. Occasionally the sympathetic communication is through the brain, as the following case will prove. Mr. Toulmin, of Hackney, attended a lady on account of her suffering severely from a diseased tooth, and she appeared also to be afflicted with hemiplegia. Mr. Toulmin extracted the tooth by the lady's desire, and in a short time the paralytic affection entirely subsided." 6.

"Several other cases of the kind are mentioned by our author. Thus, two persons came from the same town, and on the same day to consult him, each with an opening in the cheek, communicating with abscess near the alveolar process. These openings were of long standing. He directed a diseased tooth to be extracted near each ulcer, and they both quickly healed. A lady had been long afflicted with a fungoid granulation protruding through an opening in the cheek. It had resisted every remedy, 'till a tooth nearly opposite the opening was withdrawn, and there was no longer any difficulty in curing the fungoid granulation. A gentleman had

an ulcer of long standing on his chin, which could not be healed. At length a tooth became painful, and was extracted. The ulcer immediately healed. These cases are mentioned to show the necessity of diligently seeking the causes of irritation.

"Of the *general effects* resulting from local irritation, Sir Astley instances what occasionally takes place after introducing a bougie into the urethra, viz: sickness, pallor, faintness, and sometimes a single paroxysm of ague.

"He illustrates the *general effects* of local irritation or injury by a variety of examples, as by the destruction of life from a slight blow on the stomach, nothing being cognizable on dissection. Such fatal affections are, we should conceive, from the shock given to the semilunar ganglion, and the various important nerves radiating from that sensorium abdominale.

"Constitutional irritation from local injury is too often, and too fatally exemplified in compound fractures of the legs. Pain in the loins, extending up the spine to the head—restlessness—anxiety—furred tongue—loss of appetite—nausea and vomiting—deranged or suspended secretion of bile, urine, perspiration, &c. evince the affection of the nervous and digestive organs—while the participation of the circulating system is sufficiently proved by the hard, irregular, and ultimately intermitting pulse. Finally, the sensorial functions are greatly disturbed, and the patient is worn out by irritative fever, unless the—

> ——————Immedicabile vulnus
> Ense recidendum!

"The following is Sir Astley Cooper's rationale of the foregoing train of phenomena. Some parts of the explanation are open to objections, and others, though correct in principle, are rather fancifully expressed—but, upon the whole, the rationale is as good as can be offered in the present state of our knowledge.

"Thus, in constitutional irritation, whether from injury, or from external or internal disease, every part of the system may be affected, and it appears to take place in the following way: When a part of the body re-

ceives an injury, the nerves convey a knowledge of it to the important organs, as the spinal marrow, brain, heart, stomach, &c.: nature immediately commences the restorative process, by stopping all the customary secretions; the various outlets being thus closed, the blood collects in quantities in the heart and large blood vessels, which propel it with unusual force to the injured part; giving rise to inflammation in whatever form can best accomplish the desired effect. This is an illustration of the manner in which nature contends for a cure; she occasionally requires to have her ardour checked, or aided, in proportion to her powers: we must watch with 'eagle's eyes' her proceedings, and be exceedingly cautious in our interference: for by restoring the natural secretions too soon, we may by thus abstracting blood from the injured part, prevent the restorative process; or, by adding to excitement, we may prevent the beautiful and judicious operations of nature, by producing too much action." 13.

"Our author observes that excessive irritation frequently follows operations on very young subjects, but rarely on those performed on people of advanced age. He recommends that lithotomy should not be performed on children under two years. Persons deprived of their natural rest, and who take little food, suffer more from injuries than those under opposite circumstances. The same may be said of intemperance and sobriety. The necessity of informing ourselves of the habits of patients before operating on them, is sufficiently exemplified by the following case of Mr. Tyrell's, published in a note.

Case.—"John Westrip, æt. 30, was admitted into St. Thomas's Hospital on account of a severe injury to the elbow joint, caused by the wheels of a loaded coal waggon passing over the part. The nature and extent of injury were such, that I thought it advisable to amputate the limb. This was done about twenty hours after his admission into the hospital, as he would not submit to have it performed sooner. He was much intoxicated when the accident happened, but I could not get any information as to his previous history from the persons who came with him, for they had not been before acquainted with him. On the second day after the operation he had severe constitutional suffering; his pulse was very quick, his skin hot, his countenance anxious; the stump was much inflamed, and very painful: these symptoms rapidly increased, he became delirious, and the edges of the wound began to slough; the usual remedies were given to subdue the irritation, but without producing relief. On the evening of the day after he became delirious, I learnt from one of his friends who came to see him, that he had been in the habit of taking ten or twelve pints of porter daily, besides spirits. I immediately sent for some porter, which he drank with great eagerness; and in the course of an

hour after he fell asleep. He slept several hours, and awoke perfectly composed and sane: the porter was continued daily, with a few ounces of wine; the sloughing of the stump stopped, and he rapidly recovered." 16.

"In this place Sir Astley Cooper, and also Mr. Tyrrel, touch on the subject of dissection-wounds, and both seem to be of opinion that the bad consequences which occasionally result, are more frequently dependent on the state of the constitution at the time, than on any morbid poison introduced. We agree so far with Sir Astley and his editor, as to think that a great deal depends on the state of the constitution; but this does not do away with the existence of a morbid poison introduced. Of two men exposed to the poison of typhus, or the miasma of a dangerous marsh, one will become affected from the state of predisposition, while the other, from high health, will escape. But would any one argue from this, that no contagion existed in typhus or miasmata in a marsh? Again. How is it that dissection-wounds, received while examining women who die of *puerperal fever*, are so often productive of injury, not only in the predisposed, but in the most healthy dissectors? We aver, from observation and examination of the records of such cases, that almost all the injuries which happen, are in dissections of subjects who have had *inflammations* of one kind or other at the time of death. Can this be accidental? No, assuredly. The deniers of a morbid poison, or of the absorption of putrid animal matter, ask, "how is it that it is principally towards the close of the season, when the students are out of health, that we see the bad effects of dissection-wounds? We answer that, unquestionably they are then more susceptible of the poison than at the beginning of the season, when they are fresh from the country, and not debilitated by hard study and bad air. But we, in turn, beg to ask two questions. How is it that we very often see men in the prime of life, and in country practice, affected by these dissection-wounds?—And how is it that, among the squalid wretches and debilitated drunken mechanics of this metropolis, who are every day and every hour receiving punctured wounds from various instruments, we rarely hear of any serious conse-

quences as the result? Surely if nothing depended on a morbid poison or putrid matter, and every thing depended on constitution, we should as often see bad consequences from punctured wounds among mechanics, as from dissection-wounds among students. But the case is quite the reverse. Our creed then is, that in certain dead bodies, and in certain states of dead bodies, there exists a morbid poison or a putrid matter, (call it what you please,) which is capable of occasionally affecting the strongest constitutions when introduced by a wound, but which produces its effects infinitely more often and readily in those constitutions which are out of health, than in those under opposite circumstances. We do not make these remarks to prevent attention to the constitution, but to prevent the whole attention being directed there, and no importance attached to the prevention of the evil consequences—namely, the prevention of the introduction and absorption of morbid poison. If the existence of this last mentioned agent comes to be denied in toto, no care need be employed in dissections by those who are in good health. But this view of the case is, we are convinced, a dangerous one.

"It is hardly necessary to say, that our able author lays down admirable rules for the treatment of irritation, local and general; we can make room for only one extract, which, however, comprises a great deal of judicious advice and practical knowledge.

"There are two means of reducing irritation.

"First, by restoring the secretions of the different organs, and, by thus opening the outlets, lessen fever. A man who has his skin hot and dry, feeling excessively heated, if you can produce a free perspiration, will be immediately relieved and become cool. When the irritation is severe, you must not limit your medicine to act on any particular organ, but try to restore all the secretions; and this is best effected by administering mercurials to act on the liver; aperients on the intestines; diuretics on the kidneys, and antimonials on the skin.

"The second mode of relieving irritation is by allaying the exoitement of the nervous system; this can be affected by giving opium and antimony combined; or calomel, antimony, and opium, to act on the skin or liver as well as the nervous system; the latter is one of the best medicines for allaying irritation, and may be given to adults in doses of two grains of calo-

mel, two of antimonial powder, and one grain of opium: to this you may add saline medicines, for they promote the secretions and lessen the irritability of the nervous system. Liquor ammoniæ acetatis with tinctura opii, and the common saline with opium, soothe the system into peace. The alkalies, as potash and soda, diminish the irritable action of organs, as may be seen in irritable bladder. Hyoscyamus and conium are also excellent remedies, especially in those persons with whom opium disagrees.

"The abstraction of blood lessens the momentum of the circulation, and prevents the danger of congestion in any of the vital organs; but it must be taken away with the greatest care, not to diminish too much the powers of the constitution. A man was taken into Guy's Hospital, having a concussion on the brain; the dresser, who admitted him, was a great admirer of venesection, and consequently bled the patient frequently, and in large quantities; in ten days the man died. On examining the head after death, a very slight laceration of the brain was discovered, but no attempt at restoration: the continued abstraction of blood had deprived nature of her restorative powers. In compound fractures it is extremely dangerous to bleed largely; as, by lessening the power of the constitution too much, there is not sufficient energy to perform the task of reparation.

"If an important disease exist, nature will not always have power to perform the necessary duty of restoration. A man was admitted into St. Thomas's Hospital, under Mr. Cline, for a simple fracture of the os-humeri; the fracture did not unite, and scarcely any inflammation arose: on the twenty-ninth day the man died suddenly. Upon dissection an aneurism was found in his aorta, which had burst: very little if any change had taken place in the fractured part.

"When there is chronic irritation, you can only restore the system to healthy action by slowly acting on the secretions; to produce these diseases, some slow feverish action has existed, and some one of the secretions has been lessened; the skin is dry, or the bowels are costive; the bile is not properly secreted, or the urine is less abundant; hence the blood is locked in the system, and congestion, followed by inflammation, produces local diseases. The pil. hydrarg. submur. comp. is the best remedy under these circumstances, as it increases the secretions of the liver, intestines, kidneys, and skin. The blue pill, or calomel, should be followed by an aperient in the morning, as they act on the liver, but not in proportion on the other secretions. To attempt to cure such diseases suddenly, or by violent and active means, must be ever improper; a chronic treatment is required, and by slow degrees only can you restore the body to a healthy state. Let me repeat, *all the secretions must be restored, as this is the grand principle in the cure of disease.* 29.

"Under the head of "influence of the mind upon the body," Sir Astley Cooper makes many remarks of a highly interesting nature, not only as regards the patient, but the practitioner

also. It is, indeed, astonishing what a difference the temper and disposition of a man make in the chance of recovery from an accident or a disease. Much of the prognosis may be founded on the appearance of a patient, even in the first few hours after a severe injury. If he submit himself to his fate without repining—if he readily yield to the advice of his friends, and consent to every thing that is proposed for his relief, he generally does well. If, on the contrary, he bitterly laments his fate—is too anxious about the means of cure; and impatient in their not being immediately obtained, there is then a constitutional irritation highly unfavourable to recovery.

"It is the surgeon's duty to tranquillize the temper, to beget cheerfulness, and to impart confidence of recovery. Some medical practitioners are so cold and cheerless as to damp every hope; whilst others inspire confidence of recovery, and a disregard of situation, which supports the regular performance of all the actions necessary for restoration. It is your duty, therefore, to support hope, to preserve tranquillity, and to inspire cheerfulness, even when you are still doubtful of the issue." 31.

"Grief has a peculiar and powerful effect in lowering the actions of the body—arresting the secretions, particularly of the liver—and producing a low feverish state. The two worst forms of disease to which the human body is liable, cancer and fungus, are frequently, in Sir Astley's opinion, induced by grief and anxiety. Anger, too, has the power of greatly disturbing the healthy actions of the body, and retarding the progress of recovery.

"But *fear* has the greatest influence of all other emotions in destroying our best efforts to cure injuries or diseases. Often do patients declare, under such circumstances, that they cannot recover—and this prepossession seems to deprive their constitutions of all restorative power. A patient applied to Sir Astley, not long since, for symptoms that indicated stone in the bladder. He sounded and touched the stone. On informing the patient of this, the latter replied, "I hope this is not the case, for I can never submit to an operation." The patient returned into the country, and died in a few day afterwards! Several other curious instances of the influence of

fear are given from the extensive experience of our author, and the lecture on irritation concludes.

"II. *Inflammation.*—This extensive—we might almost say universal subject is treated by Sir Astley Cooper with all that talent and discrimination for which he is so remarkable. We can merely glance at some of the most curious and original portions of it.

"Speaking of the different kinds of inflammation, our author introduces the following original observations.

"There is another kind of inflammation, which I would call the irritable; in this disorder the blood-vessels are much less affected than the nerves. You are called to attend a person, who tells you that he feels in the hand, arm, or some other part, most agonizing pain: if not experienced in these matters, you will be inclined to doubt the correctness of your patient's statement, as you cannot discover any diseased appearance of the part. Some time ago I was consulted by a lady who had this painful affection in the foot, and I employed various remedies without her being relieved: finding no improvement, and suffering in health, she went to the coast, and there used a steam-bath; and, without any further means, the pain quickly subsided. The eyes are very subject to this torturing disorder. But no part is more frequently attacked by it than the breasts of young women. It produces such a degree of tenderness, that they cannot bear the slightest pressure: the pain extends to the shoulder, down the arm, and even to the elbow and fingers, accompanied by constitutional irritation. To cure these pains, and general derangement, such medicines must be given as will influence the secretions, but especially that of the uterus. This irritable inflammation sometimes attacks the testicles, rendering them extremely sensitive, so that the patient can scarcely sustain the pressure of his clothes. It is attended with little increase in the size of the gland. I have been obliged to remove the testicle in three persons for this disease. The subject of one of these operations was a gentleman from South Carolina: he came to England for advice, and consulted many of the surgeons in London, but without experiencing any relief of his sufferings, from the various remedies they advised. He at length requested me to remove the torturing part; this I did, and he returned to his native country quite well. The bladder is also occasionally disordered by this irritable inflammation, and the symptoms, in many respects, resemble those of stone; in both cases there is pain in making water, and blood is sometimes mixed with the urine. The grand difference in these two cases is this: the irritable bladder is most painful when distended; that which contains a stone, when emptied. On dissection, the inner coat of an irritable bladder has been seen the colour of red velvet. I have known this irritable inflammation attack

the rectum, and produce excessive suffering, which was relieved by large doses of soda.—Soda, rhubarb, and the compound powder of ipecacuanha, are the best remedies." 54.

"Although our author has made experiments on animals with the view of ascertaining the pathological condition of inflamed parts, yet he wisely avoids going further into the theory of inflammation than drawing such conclusions as are obvious from the evidence of the senses. He then passes on to a more important subject, the treatment. Here, as usual, the man of practical observation and wide experience appears at every step. Upon our paramount remedial agent, bloodletting, Sir Astley makes many highly judicious remarks. The state of the pulse and the appearance of the blood, daily lead practitioners into errour. *Hardness* of the pulse is a far better indication for bleeding than *quickness*. The latter, in fact, is in itself no proof that bleeding is necessary. "If hardness and quickness are united, no additional evidence of its necessity can be wanted." We doubt whether there are not exceptions even to this rule, general as it is. We are at this time attending an elderly gentleman, to whom we were called a few days ago. His pulse vibrated like a rod of iron and was very quick, considering his age. But the other phenomena of inflammation were wanting, and we did not bleed. An aperient medicine and an enema brought away some very indurated fæces, and immediately the hardness and quickness of the pulse vanished. Here then the condition of the circulation depended on irritation in the bowels and bleeding was, to say the least, unnecessary.—The appearance of the blood is still more deceitful.

"The indication for a repetition of bleeding is said to be a buffy state of the blood; but your decision must not be governed by this appearance alone, for you must still have regard to the pulse.

"When blood is cupped or hollowed upon its surface, it is said to be a proof of inflammation, and that bleeding should be repeated; but the following case will show, that even a cupped state of the blood, and buff conjoined with it, are not sufficient evidence that venesection may be repeated. A patient in Guy's Hospital, in the last stage of scurvy, whose blood vessels were so weak, that a slight pressure on the skin produced ecchymosis, whose gums frequently bled, and whose pulse was exceedingly

quick and feeble, had a very small quantity of blood taken from his arm as an experiment; after standing for a few hours, it became not only buffy, but considerably cupped." 62.

"Many excellent directions for the abstraction of blood are laid down by the lecturer; and then he points out the second best means of controlling inflammation, namely an increase, or rather a restoration of the secretions, all, or almost all of these being invariably impeded or vitiated by the presence of inflammation. The most important secretions are those from the liver, skin, and intestinal canal. "Purgatives afford relief in nearly the same manner as the abstraction of blood from the arm; for a pint of serum will pass off with the fæces, after taking a brisk cathartic." The mere presence of fæces, the secretions being unimpaired, is, comparatively speaking, of very little consequence, as every practitioner must have observed.

"It is of little use to produce action in the intestines, unless you also excite the secretion of the liver; therefore, give mercurials with your saline medicines, as these produce secretion of bile: do not give saline aperients alone, which act chiefly upon the intestines; the best plan is, to administer some mercurial medicine at night, and a purge in the morning." 67.

"The following rule of practice of an old Scotch physician is worth recording in this place.

"An old Scotch physician, for whom I had a great respect, and whom I frequently met professionally in the city, used to say, as we were entering the patients' room together, 'Weel, Mister Cooper, we ha' only twa things to keep in meend, and they'll searve us for here and herea'ter; one is always to have the fear of the Laird before our ees, that 'll do for herea'ter; and the t'other is to keep your booels open, and that will do for here." 68.

"Here Sir Astley lets fall some hints relative to the preservation of his own health, which hints have been retailed in all the popular publications of the day. These rules are simple but rational. Temperance, early rising, sponging the body every morning with cold water, have been pursued for 30 years by the worthy lecturer, and during that time he has hardly ever caught a cold. When indisposed a dose of calomel and colocynth at night, with some warm diluent before getting up in

the morning, carries off the complaint. Long may the able Baronet continue to profit by his code of hygiene! There are some people so tenacious of health, and so amply supplied with restorative powers when exposed to disease, that the very causes of indisposition in others, are to them fortifiers of the constitution. Take, for instance, alternations of atmospheric temperature, the prolific source of illness to so many of the human race. In a well poised constitution these alterations actually strengthen the whole fabric, by action and re-action; while in those who have any weak point about them, especially in the thoracic organs, there is a constant succession of morbid feelings, if not actual disorder. The code, therefore, which proves salutary to one person may prove deleterious to another. By the means above mentioned, our excellent teacher has been able to go out of the crowded and heated lecture-room into the squares of the hospital, in the severest winter nights, with merely silk stockings on his legs, and yet has rarely or never caught a cold.

"The treatment of chronic inflammation is handled by our author with great skill. He justly observes, that the remedies in this disease must have a slow and gradual action on the secretions. "We cannot take this disease by storm; and if our remedies act with violence, we will produce mischief instead of affording relief." "The principle on which this disease is founded, is the arrest of some of the secretions; and its successful treatment depends upon their restoration."

"Chronic inflammation is frequently produced through the influence of the mind on the body. Thus, long-continued grief will stop the secretion of the bile; anxiety of mind produces disease in the breasts. But whatever is the cause of the arrest of secretion, some congestion is the result; as enlargement of the liver, of glands, or of joints; the formation of common tumours, or those of a specific character, as fungus or scirrhus.

"In disease of a chronic kind, give calomel and opium; and I cannot point out to you a better example of its good effects than is observable in chronic inflammation of the joints, or testicle; in the former cases, when assisted by counter-irritation, it is by far the best remedy. The most common medicine, and probably, as a general one, the best that is administered in chronic inflammation is the pilul. hydrarg. submur. comp.: it acts at the same time on the liver, intestines, and skin; and if you can

succeed in restoring these, the disease will disappear, and its effects will be absorbed; for, by these medicines, in proportion as you increase the secretions, you excite the action of the absorbent vessels.

"Another excellent medicine, for the cure of chronic complaints, is the oxymuriate of mercury (corrosive sublimate,) dissolved in nitrous æther, and combined with tincture of bark or of rhubarb, or with the decoction of sarsaparilla; continue it for some time, watching its effects with care, always keeping in mind that mercury, given to excess, will tend to increase rather than destroy constitutional irritation: as sarsaparilla seems to possess the power of lessening irritability, we frequently give it with mercury, and in this combination they are administered with the greatest advantage.

"Chronic disorders in children require small doses of the hydrarg. e creta and rhubarb mixed together, and given every night and morning; this compound is exceedingly mild, and will have a particularly benign influence. In children also, one grain of the oxymuriate of mercury, dissolved in an ounce of tincture of bark, and given in doses of from half a drachm to one drachm, twice a day, in water, according to the age and constitution of the child, is a very valuable medicine. It is said, that the oxymuriate is decomposed by the tincture of bark; but whether it is so or not, it is attended with so many good effects, that I strongly recommend it, particularly in diseases of the mesenteric glands. Calomel and rhubarb, the hydrargyrus e creta and soda are also medicines of much power in the chronic diseases of children.

"Lastly, in some cases, it is not advisable to give these little creatures mercury; a medicine composed of rhubarb and carbonate of iron, or of rhubarb, soda, and calumba, given often, and in small doses, will be more beneficial, as these act as aperients, improve the digestive functions, increase the appetite, and restore the general health, without the danger of exciting irritation at the moment, or rendering the system afterwards irritable. 73.

"Sir Astley's directions as to the *local* treatment of inflammation, are, as might be expected, of the most practical and skilful kind. One of the best lotions that can be applied to an inflamed part, he observes, for the purpose of producing cold, is a mixture of one ounce of rectified spirit to five of water. The liq. plumb. acet. dilut. does not seem to be a favourite with the lecturer. He has known its long-continued use produce partial paralysis. In applying the solution above recommended, the linen should be fine, and put lightly on the inflamed part, in order that evaporation may go on with facility, this being the grand object in view. He does not recommend the application of ice to an inflamed part. It

irritates and is apt to produce gangrene. This advice does not apply to deep-seated inflammations, as of the brain.—"Here the application of ice is of signal service." It is, indeed! we have often seen raging mania from inflammation of the membranes of the brain calmed in a few hours, by cold to the shaven crown, and a strong band of leeches round the forehead, temples, and behind the ears.

"It is a seeming contradiction (in which articles, by the way, our science abounds) to attempt the relief of inflammation by *heat*. It is like blowing hot and cold with the same breath. The application of heat alone, however, would be injurious, by exciting, not soothing the parts. But when combined with moisture, it is beneficial, by producing relaxation, opening the cutaneous pores, and giving rise to perspiration—thereby removing congestion, and producing effects nearly similar to those which arise from a blister. Our author does not think that medicated fomentations are preferable to those made with warm water, unless the integuments be broken. We are inclined to think with Mr. Tyrrell (in a note on this passage) that anodyne fomentations and poultices are of considerable use, whether the integuments be broken or sound. Sir Astley's directions respecting local bleeding, counter-irritation, and stimulating applications in the treatment of chronic inflammation, are excellent, but cannot, of course, contain any thing novel or peculiar. Position and rest are of great consequence in the methodus medendi, though too often overlooked by young practitioners. The removal of induration left after chronic inflammation is effected by various means, as pressure, electricity, mercury, friction, &c. Each of which means is illustrated by cases from our author's extensive practice."

SELECTED INTELLIGENCE.

Mr. G. Bell presents, in a late number of the Edinburgh Journal, an excellent practical paper on Wounded Nerves and their Treatment. After some preliminary observations, he proceeds to narrate the history of a young woman who had been bled ten days before in the median cephalic of the right arm. When he saw her, the fore-arm was bent to an acute angle with the arm, and the fingers firmly contracted. Every attempt at extension caused the most excruciating pain. The incision in the vein had united, but a gentle pressure occasioned great uneasiness. The pain extended downwards to the fingers and upwards along the inside of the arm to the axilla, clavicle, pectoral muscle and short ribs. When exacerbations of pain recurred, she was seized with startings, tremors, subsultus, &c., attended with febrile symptoms. Every remediate measure had been previously in vain resorted to, and tetanus was apprehended, if speedy relief was not obtained. An incision three inches in length was made over the vein, which being displayed, was tied with two ligatures at one and a half inches from each other, and equi-distant from the wound in the vein. The portion of the vein thus enclosed, was divided, which caused instant relief, allowing the freest motions to the wrist and elbow-joints. Considering it unnecessary to pursue the case any further, we may add she recovered perfectly. Several other cases are detailed in illustration of this method of cure.—*Vide Medical Recorder.*

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Humoral Pathology.—M. Segalas reports the following results of several experiments made by him on dogs, with alcohol, and with the alcoholic extract of nux vomica, in order to solve the question of the *blood* being ever the seat of disease:—

1. Concentrated alcohol produces a chemical action on the blood during life.

2. Diluted alcohol, injected into the veins or bronchiæ, causes immediate drunkenness; but more slowly if directed to other parts.

3. That the effects of alcohol not introduced into the veins, are, as to intensity and quickness, in direct relation with the absorbing faculty of the part where it is introduced, and quite independent of the nerves there distributed, particularly of those of the stomach.

4. That these effects are accelerated and augmented, or retarded and diminished by all circumstances which favour or impede the passage of the alcohol into the blood.

5. That drunkenness is dissipated in proportion as the alcohol leaves the blood, and more or less quickly as circumstances are more or less favourable to exhalation.

6. That the intensity of the effect of alcohol is not in proportion to the quantity which has been placed in contact with the organs, but with the quantity of this liquor which is actually in the blood.

7. Lastly, that profound drunkenness, and death from drunkenness, are coincident with a manifest alteration of the blood, and with less marked changes in the solid parts.

With respect to the alcoholic extract of nux vomica, M. Segalas found the following results:—

1. That this substance acts almost immediately after its entrance into the blood, and produces general or partial tetanus, according as it has been mixed with the mass of the blood, or only with a portion of it.

2. That when introduced in other modes than by the sanguineous system, it has no action except through the circulation; that its effects are independent of the nerves, and in direct relation, as to intensity and quickness, to the absorbing faculty of the part.

3. That the local phenomena of poisoning may be manifested independently of the general enervation (*innervation*,) and have an absolute dependence on the local circulation.

4. Lastly, that many phenomena, quite inexplicable by fixed lesion of the nervous system, can be the consequence of a partial alteration of the blood; and can only be explained by the anomalous action which the altered parts of this fluid exercises on the portions of the nervous system with which they are placed in contact.

M. Segalas promises to investigate, in a second memoir, what diseases are to be considered as having their seat in the blood.

Arch. Gen. Avril.——Ib.

Experiment upon Hydrocyanic Acid.—M. Dupuy, at a recent sitting of the Royal Academy of Medicine at Paris, reported the result of an experiment which appears pretty conclusive in establishing ammonia as the antidote to Prussic Acid.—He introduced into the mouth of a horse, seven drops of pure hydrocyanic acid, diluted with twenty-four of distilled water. The horse soon staggered and fell; respiration became quick and labouring, nostrils dilated, mouth open; the tongue and eyelids were convulsed. The animal became comatose and the pulsations of the heart very rapid, twenty minutes after, a drachm of subcarb. ammon. in solution was injected into the jugular vein; in a few minutes the animal rose, and after an hour, exhibited no farther evidence of its effect than slight convulsive movements with a quickened respiration.

In confirmation of the above statement, we subjoin the following brief extract from a late No. of the Medical Repository. Professor Fremi applied two drops of concentrated prussic acid to the conjunctiva of a rabbit, which caused violent convulsions and apparent death. An unsuccessful effort was made to resuscitate the animal by means of frictions. Resorting to Murray's antidote, they employed frictions with ammonia, without exciting the action of the heart. Ammonia diluted was next exhibited, and in a few moments vitality was restored. In order to test the accuracy of the experiment, the prussic acid was applied to another rabbit, without any attempt to recover it by the ammonia, and the animal died.——*Ib.*

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Chloruret of Lime in Burns.—This substance, in rather a dilute solution, has been applied, in La Pitie, to burns of different kinds, and apparently with advantage. The application is sometimes made directly after the accident—sometimes with the precaution of previous emollient cataplasms. The burnt surface is first covered with fine linen slit in various places and spread with cerate. Over this is placed a quantity of lint wet with the solution of chloruret of lime, more or less strong, according to the idosyncrasy of the patient. The dressings should be frequently moistened with the solution, and never permitted to get dry.—*Medico-Chirurg. Review, Oct.* 1826.

Vide Phil. Jour. of the Med. and Phys. Scien.

ORIGINAL INTELLIGENCE AND NOTICES.

1. ABSORPTION OF ACTIVE SUBSTANCES INTO THE CIRCULATION.—Doctor Best of Lexington, Kentucky, has repeated a great number, embracing the most difficult of the experiments of M. Magendie and Drs. Lawrence and Coats, on the absorption of active substances into the circulation; and on the absorbing power of the veins. His experiments, conducted partly in conjunction with a respectable graduate of the Transylvania school, the late Dr. R. H. Dorsey, were chiefly on dogs and puppies. Without detailing them, it will be sufficient to state, that the results obtained, were in strict accordance with those of the eminent physiologists of Paris and Philadelphia; and, therefore, furnish additional evidence in support of the affirmative of those questions.

2. DISEASES of the WESTERN COUNTRY.—The undersigned, some time since, issued a circular letter to the physicians of the Mississippi states, soliciting from them such facts and observations as would aid him, in the composition of a history of the diseases which occur between the Gulph of Mexico and the lakes. He wishes now to say, that the work which he then announced, has not been abandoned, though deferred in consequence of various official duties; but that having divested himself of these, he hopes, at no distant time, to engage seriously in the undertaking. He returns his thanks to the gentlemen who have favoured him with communications, and will thankfully receive from others what may be adapted to the plan of such a work. DANIEL DRAKE, M. D.

Cincinnati, Ohio, March, 1827.

3. MEDICAL CONVENTION OF OHIO.—The election of delegates to the first state Medical Convention of Ohio, will take place on the last Tuesday of next month (May.) The convention will be holden at Columbus on the second Monday of December, 1827, and will be composed of a delegate from each of the Ohio medical districts, into which, the state has been divided by the law regulating the practice of physick and surgery.

Several subjects of interest to the profession, and to society at large, will probably come before this body; and it is much to be wished that the district societies, will elect, as members of the convention, physicians of character, with competent talents and information.

4. MEDICAL ACADEMY.—Doctor Barnes, of this City, has announced in a recent circular, that he "proposes to establish an Academy, for a systematic course of Medical instruction, preparatory to the student's entering a Medical College, for the completion of his profession." He will take from ten to fifty pupils. The yearly course will be divided into two sessions:—a Summer and a Winter. Six lectures a week will be

delivered, by himself and his friends, throughout each session. In the Summer on PHYSIOLOGY, MATERIA MEDICA, MATERIA ALIMENTARIA AND MEDICAL BOTANY; PHARMACEUTICAL CHEMISTRY, THE THEORY AND PRACTICE OF MEDICINE AND MEDICAL SURGERY. In the Winter on OSTEOLOGY, DEMONSTRATIVE ANATOMY, OPERATIVE SURGERY AND OBSTETRICKS.

5. LECTURES ON BOTANY.—Dr. Locke commenced a course of Lectures upon this interesting science on the 9th of this month, to continue twice a week for three months.

6. SUMMER LECTURES AT LEXINGTON, KY.—We understand that, at least four of the professors in the Medical Department of Transylvania University, intend to deliver Summer courses of Lectures, to the students of Medicine who may continue during vacation, in the vicinity of that Institution.

7. MEDICAL INSTRUCTION AT LOUISVILLE, KY.—Dr. Harrison, one of the physicians of the Louisville Hospital, has notified the students of medicine, that he has made a variety of arrangements and preparations for the tuition of a class of private pupils; among which, are admissions to the patients of that Infirmary and practical lectures on their cases.

8. RESIGNATION.—Dr. *DANIEL DRAKE*, on the 19th of March, resigned his professorship of the Theory and Practice of Medicine in Transylvania University, and will hereafter reside permanently in Cincinnati.

MEDICAL COLLEGE OF OHIO.

At the commencement of this Institution, held at Cincinnati on the 10th of March last, the degree of Doctor of Medicine was conferred on the following young gentlemen, who had written and delivered *Theses*.

OHIO—ELY DRESBACH, on Gastro-enteritis: WILLIAM DOAN, Jr. on Colica Ileus: THOMAS H. HAINS, on Puerperal Fever: JOHN S. HALLER, on Cynanche Trachealis: RICHARD H. SWAIN, on Puerperal Fever: TURNER WELCH, on Venesection in Typhus Fever: JAMES Z. ELLISON, on Portal Congestion: JOSEPH HAYNES, on Dysentery: THOMAS PIERCE, on Peritonitis: ARVA WILSON, on the Functions of the Liver.

KENTUCKY.—ROBERT W. BURTON, on the causes and phenomena of Idiopathic Fever: MITCHELL OVERSTREET, on the Uses and Applications of the Bandage: DAVID B. SANDERS, on the Causes and Phenomena of Influenza· WILLIAM H. TERREL, on Abortion.

INDIANA.—SAMUEL W. CLARKSON, on Hygiene.

MISSISSIPPI.—ZEBULON SMITH, on Gastritis.

TRANSYLVANIA UNIVERSITY.

MEDICAL DEPARTMENT.

At a public Commencement, held in the Chapel of the University, March 16th, 1827, the following gentlemen, *alumni* of the Institution, received the degree of Doctor of Medicine.

KENTUCKY.

W. O. Aldridge, on Apoplexy.
O. Brown, on Hydrophobia.
J. Challen, on Dislocations of the ankle joint.
J. Clarke, on Phthisis Dyspeptica.
C. G. Cox, on the Influence of Atmospheric Vicissitudes.
F. D. Chinn, on Cynanche Trachealis.
J. R. Desha, on Epidemic Fever.
A. P. Elston, on Fever.
S. F. Gano, on the Ætiology of Hepatic Derangements.
E. R. Hollingsworth, on Cathartics.
S. M. Letcher, on Association and Dependence of Function.
J. N. M'Dowell, on Dependence of Function.
S. O. Peyton, on Bilious Fever.
J. Railey, on the Vis Medicatrix Naturæ.
B. W. Rhoton, on Cholera Infantum.
M. S. Shuck, on the Injurious Effects of Tight Lacing.
J. B. Warren, on the Modus Operandi of Morbific Matter.
J. W. Wilson, on the Influence of the Nervous System on Secretion.
J. D. Winston, on Injuries of the Integuments of the Head.

TENNESSEE.

D. F. Brown, on the Functions of the Liver.
S. P. Jordan, on Lues Venerea.
J. M. Marable, on Hydrocele.
R. C. K. Martin, on the Operation of Morbific and Curative Agents through the Circulation.
D. W. Mentlo, on Fever.
P. F. Norfleet, on Functional Derangement of the Liver.
J. Orgain, on Epilepsy.
D. M. Porter, on Hernia Humoralis.
W. Thomas, on Cholera Infantum.

VIRGINIA.

H. EASLEY, on the Physiology of the Spleen.
G. HARRIS on Scrophula.
J. H. JACKSON, on Inflammation.
W. C. JACKSON, on Hydrarthus.
J. LAFON, on the Bandage.
A. R. PRESTON, on Depletion in Inflammatory Fever.
J. SIMPKINS, on Hepatitis.
J. M. WALKER, on Chronic Derangement of the Digestive Functions.

SOUTH CAROLINA.

W. CANTRELL, on the Anatomy of the Internal Organs of Generation.
B. W. EARLE, on the Milk Sickness.
J. J. HAMPTON, on Podagra.
J. P. MILLER, on Cynanche Trachealis.
S. WRIGHT, on the term Idiopathic.

ALABAMA.

E. B. ADAMS, on the Treatment of Fractures.
D. J. GATEWOOD, on Chronic Hepatitis.
R. P. JONES, on Dyspepsia.
H. A. PROUT, on the Relations of the Mineral, Vegetable and Animal Kingdoms.

MISSISSIPPI.

T. J. CATCHING, on the Origin and Termination of the Absorbents.
K. McKINNEY, on Uterine Hœmorrhage.
W. LEA, on Purulent Ophthalmia.

MISSOURI.

W. S. MAY, on Bilious Fever.
P. B. WILCOX, on the Pathology and Therapeuticks of Dyspepsia.

NEW YORK.

H. GRAHAM, on the Forces which Circulate the Blood.

NORTH CAROLINA.

O. B. IRVINE, on Blenorrhœa.

LOUISIANA.

R. M. COLLINS, on the Ætiology of Fever.

DANIEL DRAKE,
Dean of the Medical Faculty.

Lexington, Kentucky, March 16th, 1827.